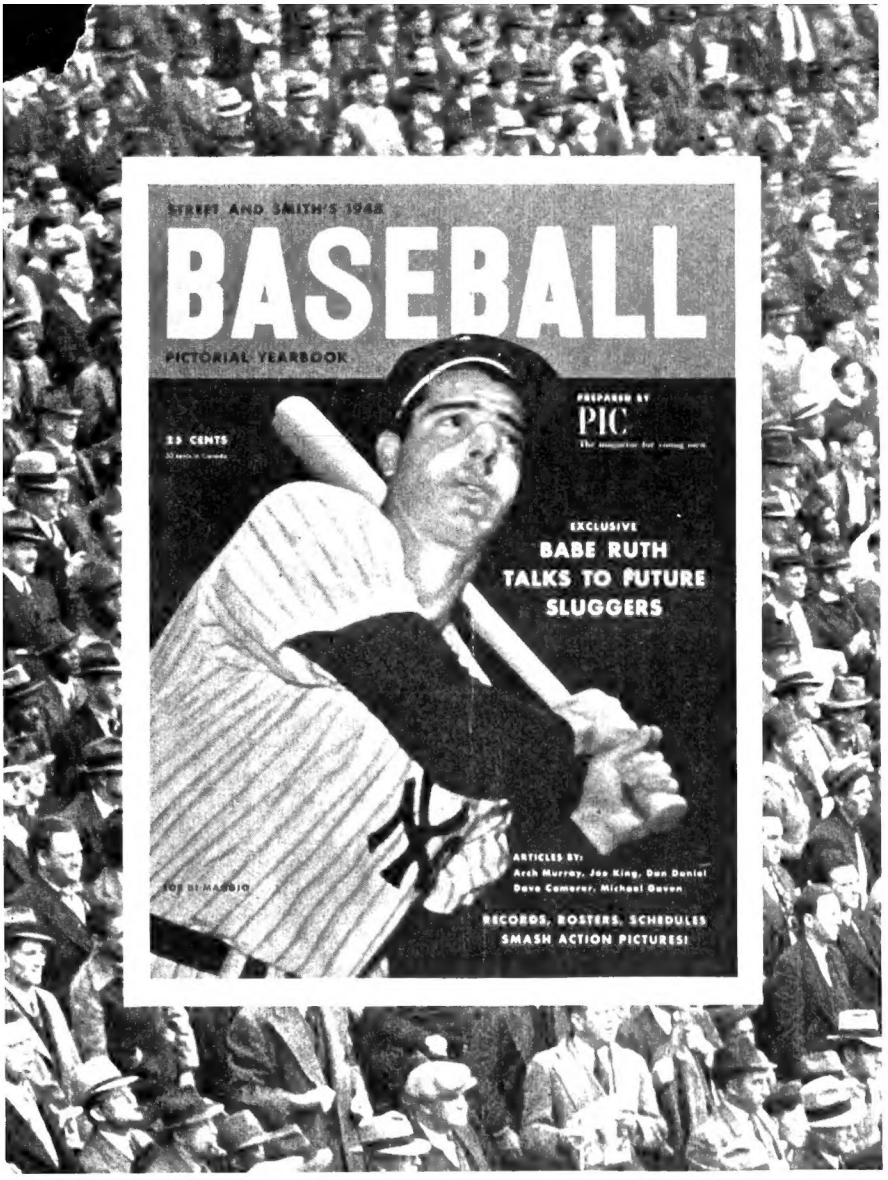
Astounding

SCIENCE FICTION

DREADFUL SANCTUARY By Eric Frank Russell

Reg. U. S. Pat. Off.

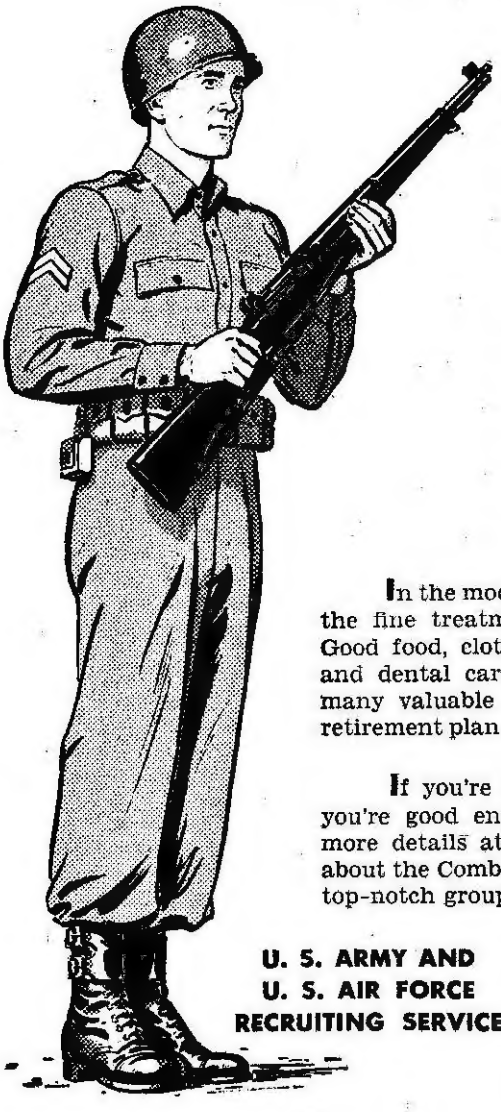


ON SALE

AT ALL NEWSSTANDS

25 CENTS

"I'M PROUD TO BE IN THE COMBAT FORCES!"



Any member of the Infantry, Artillery, or Armored Cavalry will tell you — and very quickly, too! — that he's proud to be part of the Combat Forces. For this is a truly select group—the sharp cutting edge of the U. S. Army.

Physically, the modern Combat Soldier is husky and alert. Mentally he is way above average. The Combat Soldier handles weapons of astounding force and accuracy; and he can travel fast and far, by air, sea, or land transport. He *has to be all man* because he has a great job!

In the modern Army, Combat Soldiers get the fine treatment they deserve. High pay. Good food, clothing, and recreation. Medical and dental care. Variety of training among many valuable skills and trades. The finest retirement plan anywhere. Many other benefits.

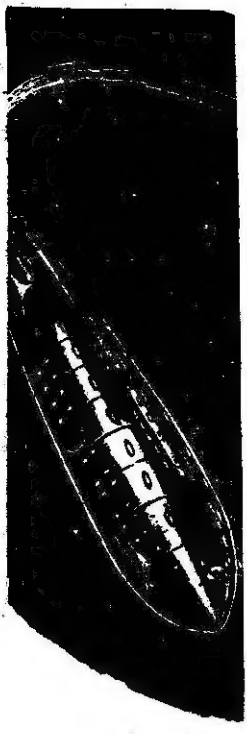
If you're between 17 and 34 and think you're good enough to make the grade, get more details at your Recruiting Station. Ask about the Combat Forces — now considered the top-notch group in the big Army team.

U. S. ARMY AND U. S. AIR FORCE RECRUITING SERVICE

CAREERS WITH A FUTURE

U. S. Army and U. S. Air Force

AST—1W



Astounding
SCIENCE FICTION

Reg. U. S. Pat. Off.

CONTENTS

JULY, 1948 VOL. XLI, NO. 5

NOVELETTE

POLICE OPERATION, *by H. Beam Piper* . . . 8

SHORT STORIES

DECISION ILLOGICAL, *by Neal E. Wilkinson* 30
BURNING BRIGHT, *by John S. Browning* . . . 45

ARTICLE

THE OTHER END OF THE TRAJECTORY, *by Willy Ley* 93

SERIAL

DREADFUL SANCTUARY, *by Eric Frank Russell* 76
(Part Two of Three Parts)

READERS' DEPARTMENTS

THE EDITOR'S PAGE 5
THE ANALYTICAL LABORATORY 62
BOOK REVIEW 73
IN TIMES TO COME 75
BRASS TACKS 152

Editor
JOHN W. CAMPBELL, JR.

COVER BY BONESTELL

Illustrations by Cartier, Orban and Timmins

The editorial contents have not been published before, are protected by copyright and cannot be reprinted without publishers' permission. All stories in this magazine are fiction. No actual persons are designated by name or character. Any similarity is coincidental.

Monthly publication issued by Street & Smith Publications, Incorporated, 122 East 42nd Street, New York 17, N. Y. Allen L. Grammer, President; Gerald H. Smith, Exec. Vice President; Henry W. Ralston, Vice President and Secretary; Thomas H. Kaiser, Treasurer. Copyright, 1948, in U. S. A. and Great Britain by Street & Smith Publications, Inc. Reentered as Second-class Matter, February 7, 1938, at the Post Office at New York, under Act of Congress of March 3, 1879. Subscriptions to Countries in Pan American Union, $2.75 per year; $3.00 per year in Canada; elsewhere, $3.25 per year. All subscriptions should be addressed to P.O. Box 494, Elizabeth, N. J. We cannot accept responsibility for unsolicited manuscripts or artwork. Any material submitted must include return postage.

$2.50 per Year in U. S. A. Printed in [illegible] the U. S. A. 25c per Copy

NEXT ISSUE ON SALE JULY 20, 1948

EDUCATIONAL PROBLEM

One of the nation's major hospitals, specializing in the treatment of cancer by all available means—both chemical, X ray, surgery, and now the newer atomic radiation treatments—employs a full-time staff of physicists to co-operate with the physicians in handling the delicate business of applying radiation to human tissues. It takes a nuclear physicist, working in closest co-operation with a top-notch medical research specialist, to work out the problems involved in handling the inherently dangerous radioactive isotopes during their present research stage. Unfortunately, it takes a trained specialist in that field to realize and recognize the full danger of those terribly powerful therapeutic weapons.

Recently, the chief physicist of that hospital was genuinely alarmed to receive a telephone call from a pharmacist, asking where he could obtain radioactive iodine; a doctor in his neighborhood wanted to prescribe some to a patient. Now a number of articles on radioiodine treatment of thyroid conditions, both cancer type problems and simple hyperthyroidism, have appeared in the medical journals, as well in journals of nuclear physics. Presumably some physician had seen such an article, and wanted to try it. The point that scared the hospital's physicist was that, obviously, the man didn't know what he was dealing with. Radioiodine is not something you keep on a drugstore shelf; in the first place it doesn't keep, and in the second it's apt to injure the druggist by its radiations, unless kept in a lead-lined vault.

That particular incident is unimportant, but it exemplifies the whole problem. There are two ways of approaching the essential task of making it possible for the sick everywhere to have the benefits possible with atomic medicine. One is to convert every doctor in the nation into a specially trained, competent nuclear-physicist-physician, able to handle the tricky, dangerous materials in the form we have them. He must, of course, be supplied with adequate instruments for measuring the radioactives he works with, and must be trained to properly interpret the readings of those instruments. Probably a usable level of understanding could be achieved by a six-months intensive course in nuclear theory, nuclear laboratory techniques, and clinical work with atomic medicines under the guidance of the present highly trained specialists. The course, plus the necessary instruments to use the newly acquired knowledge in his own office practice, would probably cost the physician about $6,000 to $10,000.

Doctors who can afford that sort of training and equipment live in large cities, where a fairly high-income group of patients can support them. The cities, however,

already have competent specialists, and convenient X-ray radiation therapy units. It's the back-country, small-town and farming areas, fairly remote from large cities where the problem is really acute—and there the medical situation is very different. To a large extent, the local doctors live comfortably on a relatively low cash income, getting goods and services as a major part of their income, rather than cash with which to buy equipment. Also, they are usually the one doctor available in anywhere from half a county to four or five counties—and they can't leave their patients for six months without any medical aid in time of emergency.

Instead, the nuclear physicists, and the specialists now working with them in big research centers, must work out the technique of applying atomic medicine and atomic radiation instruments to a cut-and-dried, routine operation, simplified to a point that will permit the ordinary intelligent medically trained man to use the weapons of nuclear physics against disease and misfunction. The highly technical and elaborate researches that went into development of the blood-counting techniques of today originally required top-level research specialists, men who devoted their lives to laboratory work, not diverting their attention to actually treating patients. Today, however, those techniques have been refined, simplified, reworked and reduced to a routine sufficiently reliable and simple that any technically minded medically-trained man can learn the required procedures in a few days of practice. Similarly simplified routine procedures for use of radioactives *must* be developed.

The importance of this can best be realized by considering one particular type of cancer—skin cancer. In a modern cancer hospital, skin cancer has a five-year cure rate on the order of ninety-five per cent. That is, ninety-five per cent of the cases treated show no recurrence after five years. Skin cancer is usually spotted early, because it's visible. It is very effectively treated by radiation techniques, because it is in the direct line of fire. Low-voltage X rays of low penetrative power can expend their energy destroying the cancer cells, and not reach through to damage healthy tissue beyond.

The difficulty is that, while skin cancer is fairly common—the skin, after all, is exposed to more troubles than any other part of the body—the X-ray equipment needed to treat it is not. In the back-country areas, adequate X-ray facilities do not exist. Low-income patients can't afford to travel the many miles necessary to reach an X-ray clinic for a prolonged series of radiation treatments. But synthetic radioactive isotopes can be produced for a few dollars, shielded adequately in a few dollars worth of lead, and shipped cheaply to the country doctor—if only that doctor can be taught how to use the cancer-killer put into his hands.

An adequate supply of the radioactive isotope, sealed in a lead box, would be safe and easily used. But

the common mechanical investigative heritage of the American male—particularly those who take to technology of any kind, including medicine—produces a strong desire to open up the gadget and see what makes it work. With four-year-olds, that leads to opened and nonfunctional drums. With teen-agers, that leads to hot-rod jallopys and backyard mechanics. With insufficiently warned possessors of a lead box of radioactive isotopes, it leads to the most secret and subtle kind of death—death by the painless, invisible, intangible radiations from exposed, violently disintegrating radioactive atoms. The little plastic-film container holding a pinch or so of faintly blue-glowing white powder looks so harmless, there in its leaden nest. Perhaps for safety, the lead ray shielding should be cast inside a drill-proof steel case bolted shut with case-hardened bolts whose threads are ruined after tightening.

The immense advantage of radioactive medicine is that it permits application of the curative treatment where X rays can't be used because of purely practical considerations. One example is leukemia—a cancerous type of white blood cell trouble. At present, cures are almost impossible, but treatment by either X rays or radioactive phosphorus are about equally effective in controlling the condition, and extending life for several years. Medically, radiophosphorus has no advantage over X-ray treatment; practically it has immense advantages in many cases. The city doctor will continue to favor X rays, because there are long-known, familiar techniques for which he is fully prepared and fully equipped. But for a patient who must come one hundred and fifty miles or more, and has a relatively low cash income, the doctor's convenience isn't so meaningful. The patient can manage one trip in for diagnosis and initial examination, and perhaps another trip a few months later. But not a trip every other day or so. For such a patient, the doctor could put up a solution of radioactive phosphorus in little bottles, properly labeled, to be taken at one or two-day intervals.

What we need—*right now*—is a development of practical, simplified techniques of applying already-known atomic medical knowledge. The methods must be worked out by research nuclear physicists and clinical experts in co-operation with medical education authorities. The techniques must be standardized, and developed in a form that will permit an average doctor to handle the powerful forces put at his disposal safely, effectively and beneficially. Ideally, it should be a home-study type of course, for many areas which would most benefit by such medicines can least afford to have their doctor leave for special training.

It's a tough demand—reducing synthetic radioactive therapy to a run-of-the-mine, routine procedure, to be handled with safety but without adequate instruments by men who are not specialists. But that's what we need.

THE EDITOR.

POLICE OPERATION

BY H. BEAM PIPER

***Hunting** down the beast, under the best of circumstances, was dangerous. But in this little police operation, the conditions required the use of inadequate means!*

Illustrated by Cartier

". . . there may be something in the nature of an occult police force, which operates to divert human suspicions, and to supply explanations that are good enough for whatever, somewhat in the nature of minds, human beings have—or that, if there be occult mischief makers and occult ravagers, they may be of a world also of other beings that are acting to check them, and to explain them, not benevolently, but to divert suspicion from themselves, because they, too, may be exploiting life upon this earth, but in ways more subtle, and in orderly, or organized, fashion."

Charles Fort: "LO!"

John Strawmyer stood, an irate figure in faded overalls and sweat-whitened black shirt, apart from the others, his back to the weathered farm-buildings and the line of yellowing woods and the cirrus-streaked blue October sky. He thrust out a work-gnarled hand accusingly.

"That there heifer was worth two hund'rd, two hund'rd an' fifty dollars!" he clamored. "An' that there dog was just like one uh the fam'ly; An' now look at'm! I don't like t' use profane language, but you'ns gotta *do* some'n about this!"

Steve Parker, the district game protector, aimed his Leica at the carcass of the dog and snapped the shutter. "We're doing something about it," he said shortly. Then he stepped ten feet to the left and edged around the mangled heifer, choosing an angle for his camera shot.

The two men in the gray whipcords of the State police, seeing that Parker was through with the dog, moved in and squatted to examine it. The one with the triple chevrons on his sleeves took it by both forefeet and flipped it over on its back. It had been a big brute, of nondescript breed, with a rough black-and-brown coat. Something had clawed it deeply about the head, its throat was slashed transversely several times, and it had been disemboweled by a single slash that had opened its belly from breastbone to tail. They looked at it carefully, and then went to stand beside Parker while he photographed the dead heifer. Like the dog, it had been talon-raked on either side of the head, and its throat had been slashed deeply several times. In addition, flesh had been torn from one flank in great strips.

"I can't kill a bear outa season, no!" Strawmyer continued his plaint. "But a bear comes an' kills my stock an' my dog; that there's all right! That's the kinda deal a farmer always gits, in this state! I don't like t' use profane language—"

"Then don't!" Parker barked at him, impatiently. "Don't use any kind of language. Just put in your claim and shut up!" He turned to the men in whipcords and gray Stetsons. "You boys seen everything?" he asked. "Then let's go."

They walked briskly back to the barnyard, Strawmyer following them, still vociferating about the wrongs of the farmer at the hands of a cynical and corrupt State government. They climbed into the State police car, the sergeant and the private in front and Parker into the rear, laying his camera on the seat beside a Winchester carbine.

"Weren't you pretty short with that fellow, back there, Steve?" the sergeant asked as the private started the car.

"Not too short. 'I don't like t' use profane language'," Parker mimicked the bereaved heifer owner, and then he went on to specify: "I'm morally certain that he's shot at least four illegal deer

in the last year. When and if I ever get anything on him, he's going to be sorrier for himself then he is now."

"They're the characters that always beef their heads off," the sergeant agreed. "You think that whatever did this was the same as the others?"

"Yes. The dog must have jumped it while it was eating at the heifer. Same superficial scratches about the head, and deep cuts on the throat or belly. The bigger the animal, the farther front the big slashes occur. Evidently something grabs them by the head with front claws, and slashes with hind claws; that's why I think it's a bobcat."

"You know," the private said, "I saw a lot of wounds like that during the war. My outfit landed on Mindanao, where the guerrillas had been active. And this looks like bolo-work to me."

"The surplus-stores are full of machetes and jungle knives," the sergeant considered. "I think I'll call up Doc Winters, at the County Hospital, and see if all his squirrel-fodder is present and accounted for."

"But most of the livestock was eaten at, like the heifer," Parker objected.

"By definition, nuts have abnormal tastes," the sergeant replied. "Or the eating might have been done later, by foxes."

"I hope so; that'd let me out," Parker said.

"Ha, listen to the man!" the private howled, stopping the car at the end of the lane. "He thinks a nut with a machete and a Tarzan complex is just good clean fun. Which way, now?"

"Well, let's see." The sergeant had unfolded a quadrangle sheet; the game protector leaned forward to look at it over his shoulder. The sergeant ran a finger from one to another of a series of variously colored crosses which had been marked on the map.

"Monday night, over here on Copperhead Mountain, that cow was killed," he said. "The next night, about ten o'clock, that sheepflock was hit, on this side of Copperhead, right about here. Early Wednesday night, that mule got slashed up in the woods back of the Weston farm. It was only slightly injured; must have kicked the whatzit and got away, but the whatzit wasn't too badly hurt, because a few hours later, it hit that turkey-flock on the Rhymer farm. And last night, it did that." He jerked a thumb over his shoulder at the Strawmyer farm. "See, following the ridges, working toward the southeast, avoiding open ground, killing only at night. Could be a bobcat, at that."

"Or Jink's maniac with the machete," Parker agreed. "Let's go up by Hindman's gap and see if we can see anything."

•

They turned, after a while, into a rutted dirt road, which deteriorated steadily into a grass-grown track through the woods. Finally, they stopped, and the private backed off the road. The three men got out; Parker with his Winchester, the sergeant checking the drum of a Thompson, and the private pump-

ing a buckshot shell into the chamber of a riot gun. For half an hour, they followed the brush-grown trail beside the little stream; once, they passed a dark gray commercial-model jeep, backed to one side. Then they came to the head of the gap.

A man, wearing a tweed coat, tan field boots, and khaki breeches, was sitting on a log, smoking a pipe; he had a bolt-action rifle across his knees, and a pair of binoculars hung from his neck. He seemed about thirty years old, and any bobby-soxer's idol of the screen would have envied him the handsome regularity of his strangely immobile features. As Parker and the two State policemen approached, he rose, slinging his rifle, and greeted them.

"Sergeant Haines, isn't it?" he asked pleasantly. "Are you gentlemen out hunting the critter, too?"

"Good afternoon, Mr. Lee. I thought that was your jeep I saw, down the road a little." The sergeant turned to the others. "Mr. Richard Lee; staying at the old Kinchwalter place, the other side of Rutter's Fort. This is Mr. Parker, the district game protector. And Private Zinkowski." He glanced at the rifle. "Are you out hunting for it, too?"

"Yes, I thought I might find something, up here. What do you think it is?"

"I don't know," the sergeant admitted. "It could be a bobcat. Canada lynx. Jink, here, has a theory that it's some escapee from the paper-doll factory, with a machete. Me, I hope not, but I'm not ignoring the possibility."

The man with the matinee-idol's face nodded. "It could be a lynx. I understand they're not unknown, in this section."

"We paid bounties on two in this county, in the last year," Parker said. "Odd rifle you have, there; mind if I look at it?"

"Not at all." The man who had been introduced as Richard Lee unslung and handed it over. "The chamber's loaded," he cautioned.

"I never saw one like this," Parker said. "Foreign?"

"I think so. I don't know anything about it; it belongs to a friend of mine, who loaned it to me. I think the action's German, or Czech; the rest of it's a custom job, by some West Coast gunmaker. It's chambered for some ultra-velocity wildcat load."

The rifle passed from hand to hand: the three men examined it in turn, commenting admiringly.

"You find anything, Mr. Lee?" the sergeant asked, handing it back.

"Not a trace." The man called Lee slung the rifle and began to dump the ashes from his pipe. "I was along the top of this ridge for about a mile on either side of the gap, and down the other side as far as Hindman's Run; I didn't find any tracks, or any indication of where it had made a kill."

The game protector nodded, turning to Sergeant Haines.

"There's no use us going any farther," he said. "Ten to one, it followed that line of woods back of Strawmyer's, and crossed over

to the other ridge. I think our best bet would be the hollow at the head of Lowrie's Run. What do you think?"

The sergeant agreed. The man called Richard Lee began to refill his pipe methodically.

"I think I shall stay here for a while, but I believe you're right. Lowrie's Run, or across Lowrie's Gap into Coon Valley," he said.

After Parker and the State policemen had gone, the man whom they had addressed as Richard Lee returned to his log and sat smoking, his rifle across his knees. From time to time, he glanced at his wrist watch and raised his head to listen. At length, faint in the distance, he heard the sound of a motor starting.

Instantly, he was on his feet. From the end of the hollow log on which he had been sitting, he produced a canvas musette-bag. Walking briskly to a patch of damp ground beside the little stream, he leaned the rifle against a tree and opened the bag. First, he took out a pair of gloves of some greenish, rubberlike substance, and put them on, drawing the long gauntlets up over his coat sleeves. Then he produced a bottle and unscrewed the cap. Being careful to avoid splashing his clothes, he went about, pouring a clear liquid upon the ground in several places. Where he poured, white vapors rose, and twigs and grass grumbled into brownish dust. After he had replaced the cap and returned the bottle to the bag, he waited for a few minutes, then took a spatula from the musette and dug where he had poured the fluid, prying loose four black, irregular-shaped lumps of matter, which he carried to the running water and washed carefully, before wrapping them and putting them in the bag, along with the gloves. Then he slung bag and rifle and started down the trail to where he had parked the jeep.

Half an hour later, after driving through the little farming village of Rutter's Fort, he pulled into the barnyard of a rundown farm and backed through the open doors of the barn. He closed the double doors behind him, and barred them from within. Then he went to the rear wall of the barn, which was much closer the front than the outside dimensions of the barn would have indicated.

He took from his pocket a black object like an automatic pencil. Hunting over the rough plank wall, he found a small hole and inserted the pointed end of the pseudo-pencil, pressing on the other end. For an instant, nothing happened. Then a ten-foot-square section of the wall receded two feet and slid noiselessly to one side. The section which had slid inward had been built of three-inch steel, masked by a thin covering of boards; the wall around it was two-foot concrete, similarly camouflaged. He stepped quickly inside.

Fumbling at the right side of the opening, he found a switch and flicked it. Instantly, the massive steel plate slid back into place with a soft, oily click. As it did, lights

came on within the hidden room, disclosing a great semiglobe of some fine metallic mesh, thirty feet in diameter and fifteen in height. There was a sliding door at one side of this; the man called Richard Lee opened and entered through it, closing it behind him. Then he turned to the center of the hollow dome, where an armchair was placed in front of a small desk below a large instrument panel. The gauges and dials on the panel, and the levers and switches and buttons on the desk control board, were all lettered and numbered with characters not of the Roman alphabet or the Arabic notation, and, within instant reach of the occupant of the chair, a pistollike weapon lay on the desk. It had a conventional index-finger trigger and a hand-fit grip, but, instead of a tubular barrel, two slender parallel metal rods extended about four inches forward of the receiver, joined together at what would correspond to the muzzle by a streamlined knob of some light blue ceramic or plastic substance.

The man with the handsome immobile face deposited his rifle and musette on the floor beside the chair and sat down. First, he picked up the pistollike weapon and checked it, and then he examined the many instruments on the panel in front of him. Finally, he flicked a switch on the control board.

At once, a small humming began, from some point overhead. It wavered and shrilled and mounted in intensity, and then fell to a steady monotone. The dome about him flickered with a queer, cold irridescence, and slowly vanished. The hidden room vanished, and he was looking into the shadowy interior of a deserted barn. The barn vanished; blue sky appeared above, streaked with wisps of high cirrus cloud. The autumn landscape flickered unreally. Buildings appeared and vanished, and other buildings came and went in a twinkling. All around him, half-seen shapes moved briefly and disappeared.

Once, the figure of a man appeared, inside the circle of the dome. He had an angry, brutal face, and he wore a black tunic piped with silver, and black breeches, and polished black boots, and there was an insignia, composed of a cross and thunderbolt, on his cap. He held an automatic pistol in his hand.

Instantly, the man at the desk snatched up his own weapon and thumbed off the safety, but before he could lift and aim it, the intruder stumbled and passed outside the force-field which surrounded the chair and instruments.

For a while, there were fires raging outside, and for a while, the man at the desk was surrounded by a great hall, with a high, vaulted ceiling, through which figures flitted and vanished. For a while, there were vistas of deep forests, always set in the same background of mountains and always under the same blue cirrus-laced sky. There was an interval of flickering blue-white light, of unbearable intensity. Then the man at the desk was

surrounded by the interior of vast industrial works. The moving figures around him slowed, and became more distinct. For an instant, the man in the chair grinned as he found himself looking into a big washroom, where a tall blond girl was taking a shower bath, and a pert little redhead was vigorously drying herself with a towel. The dome grew visible, coruscating with many-colored lights and then the humming died and the dome became a cold and inert mesh of fine white metal. A green light above flashed on and off slowly.

He stabbed a button and flipped a switch, then got to his feet, picking up his rifle and musette and fumbling under his shirt for a small mesh bag, from which he took an inch-wide disk of blue plastic. Unlocking a container on the instrument panel, he removed a small roll of solidograph-film, which he stowed in his bag. Then he slid open the door and emerged into his own dimension of space-time.

Outside was a wide hallway, with a pale green floor, paler green walls, and a ceiling of greenish off-white. A big hole had been cut to accommodate the dome, and across the hallway a desk had been set up, and at it sat a clerk in a pale blue tunic, who was just taking the audio-plugs of a music-box out of his ears. A couple of policemen in green uniforms, with ultrasonic paralyzers dangling by thongs from their left wrists and holstered sigma-ray needlers like the one on the desk inside the dome, were kidding with some girls in vivid orange and scarlet and green smocks. One of these, in bright green, was a duplicate of the one he had seen rubbing herself down with a towel.

"Here comes your boss-man," one of the girls told the cops, as he approached. They both turned and saluted casually. The man who had lately been using the name of Richard Lee responded to their greeting and went to the desk. The policemen grasped their paralyzers, drew their needlers, and hurried into the dome.

Taking the disk of blue plastic from his packet, he handed it to the clerk at the desk, who dropped it into a slot in the voder in front of him. Instantly, a mechanical voice responded:

"Verkan Vall, blue-seal noble, hereditary Mavrad of Nerros. Special Chief's Assistant, Paratime Police, special assignment. Subject to no orders below those of Tortha Karf, Chief of Paratime Police. To be given all courtesies and co-operation within the Paratime Transposition Code and the Police Powers Code. Further particulars?"

The clerk pressed the "no"-button. The blue sigil fell out the release-slot and was handed back to its bearer, who was drawing up his left sleeve.

"You'll want to be sure I'm *your* Verkan Vall, I suppose?" he said, extending his arm.

"Yes, quite, sir."

The clerk touched his arm with a small instrument which swabbed it with antiseptic, drew a minute blood-sample, and medicated the needle prick, all in one almost pain-

less operation. He put the blood-drop on a slide and inserted it at one side of a comparison microscope, nodding. It showed the same distinctive permanent colloid pattern as the sample he had ready for comparison; the colloid pattern given in infancy by injection to the man in front of him, to set him apart from all the myriad other Verkan Valls on every other probability-line of paratime.

"Right, sir," the clerk nodded.

The two policemen came out of the dome, their needlers holstered and their vigilance relaxed. They were lighting cigarettes as they emerged.

"It's all right, sir," one of them said. "You didn't bring anything in with you, this trip."

The other cop chuckled. "Remember that Fifth Level wild-man who came in on the freight conveyor at Jandar, last month?" he asked.

If he was hoping that some of the girls would want to know, what wild-man, it was a vain hope. With a blue-seal mavrad around, what chance did a couple of ordinary coppers have? The girls were already converging on Verkan Vall.

"When are you going to get that monstrosity out of our restroom," the little redhead in green coveralls was demanding. "If it wasn't for that thing, I'd be taking a shower, right now."

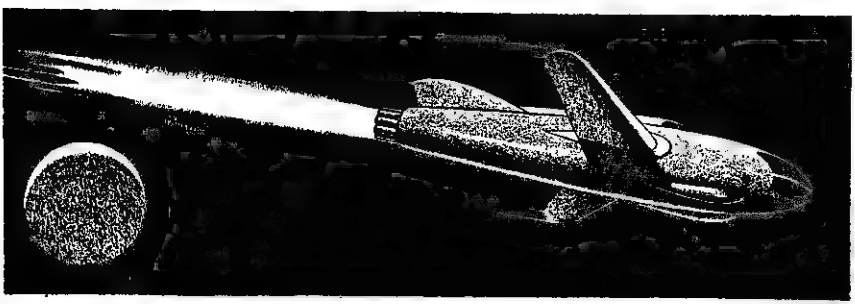
"You were just finishing one, about fifty paraseconds off, when I came through." Verkan Vall told her.

The girl looked at him in obviously feigned indignation.

"Why, you— You *parapeeper!*"

Verkan Vall chuckled and turned to the clerk. "I want a strato-rocket and pilot, for Dhergaber, right away. Call Dhergabar Paratime Police Field and give them my ETA; have an air-taxi meet me, and have the chief notified that I'm coming in. Extraordinary report. Keep a guard over the conveyor; I think I'm going to need it, again, soon." He turned to the little redhead. "Want to show me the way out of here, to the rocket field?" he asked.

Outside, on the open landing field, Verkan Vall glanced up at the sky, then looked at his watch. It had been twenty minutes since he had backed the jeep into the barn, on that distant other time-line; the



same delicate lines of white cirrus were etched across the blue above. The constancy of the weather, even across two hundred thousand para-years of perpendicular time, never failed to impress him. The long curve of the mountains was the same, and they were mottled with the same autumn colors, but where the little village of Rutter's Fort stood on that other line of probability, the white towers of an apartment-city rose—the living quarters of the plant personnel.

The rocket that was to take him to headquarters was being hoisted with a crane and lowered into the firing-stand, and he walked briskly toward it; his rifle and musette slung. A boyish-looking pilot was on the platform, opening the door of the rocket; he stood aside for Verkan Vall to enter, then followed and closed it, dogging it shut while his passenger stowed his bag and rifle and strapped himself into a seat.

"Dhergabar Commercial Terminal, sir?" the pilot asked, taking the adjoining seat at the controls.

"Paratime Police Field, back of the Paratime Administration Building."

"Right, sir. Twenty seconds to blast, when you're ready."

"Ready now." Verkan Vall relaxed, counting seconds subconsciously.

The rocket trembled, and Verkan Vall felt himself being pushed gently back against the upholstery. The seats, and the pilot's instrument panel in front of them, swung on gimbals, and the finger of the indicator swept slowly over a ninety-degree arc as the rocket rose and leveled. By then, the high cirrus clouds Verkan Vall had watched from the field were far below; they were well into the stratosphere.

There would be nothing to do, now, for the three hours in which the rocket sped northward across the pole and southward to Dhergabar; the navigation was entirely in the electronic hands of the robot controls. Verkan Vall got out his pipe and lit it; the pilot lit a cigarette.

"That's an odd pipe, sir," the pilot said. "Out-time item?"

"Yes, Fourth Probability Level; typical of the whole paratime belt I was working in." Verkan Vall handed it over for inspection. "The bowl's natural brier-root; the stem's a sort of plastic made from the sap of certain tropical trees. The little white dot is the maker's trademark; it's made of elephant tusk."

"Sounds pretty crude to me, sir." The pilot handed it back. "Nice workmanship, though. Looks like good machine production."

"Yes. The sector I was on is really quite advanced, for an electrochemical civilization. That weapon I brought back with me—that solid-missile projector—is typical of most Fourth Level culture. Moving parts machined to the closest tolerances, and interchangeable with similar parts of all similar weapons. The missile is a small bolt of cupro-alloy coated lead, propelled by expanding gases from the ignition of some nitro-cellulose compound. Most of their scientific advance oc-

curred within the past century, and most of that in the past forty years. Of course, the life-expectancy on that level is only about seventy years."

"Humph! I'm seventy-eight, last birthday," the boyish-looking pilot snorted. "Their medical science must be mostly witchcraft!"

"Until quite recently, it was," Verkan Vall agreed. "Same story there as in everything else—rapid advancement in the past few decades, after thousands of years of cultural inertia."

"You know, sir, I don't really understand this paratime stuff," the pilot confessed. "I know that all time is totally present, and that every moment has its own past-future line of event-sequence, and that all events in space-time occur according to maximum probability, but I just don't get this alternate probability stuff, at all. If something exists, it's because it's the maximum-probability effect of prior causes; why does anything else exist on any other time-line?"

Verkan Vall blew smoke at the air-renovator. A lecture on paratime theory would nicely fill in the three-hour interval until the landing at Dhergabar. At least, this kid was asking intelligent questions.

"Well, you know the principal of time-passage, I suppose?" he began.

"Yes, of course; Rhogom's Doctrine. The basis of most of our psychical science. We exist perpetually at all moments within our life-span; our extraphysical ego component passes from the ego existing at one moment to the ego existing at the next. During unconsciousness, the EPC is 'time-free'; it may detach, and connect at some other moment, with the ego existing at that time-point. That's how we precog. We take an autohypno and recover memories brought back from the future moment and buried in the subconscious mind."

"That's right," Verkan Vall told him. "And even without the autohypno, a lot of precognitive matter leaks out of the subconscious and into the conscious mind, usually in distorted forms, or else inspires 'instinctive' acts, the motivation for which is not brought to the level of consciousness. For instance, suppose, you're walking along North Promenade, in Dhergabar, and you come to the Martian Palace Café, and you go in for a drink, and meet same girl, and strike up an acquaintance with her. This chance acquaintance develops into a love affair, and a year later, out of jealousy, she rays you half a dozen times with a needler."

"Just about that happened to a friend of mine, not long ago," the pilot said. "Go on, sir."

"Well, in the microsecond or so before you die—or afterward, for that matter, because we know that the extraphysical component survives physical destruction—your EPC slips back a couple of years, and re-connects at some point pastward of your first meeting with this girl, and carries with it memories of everything up to the moment of detachment, all of which are indelibly recorded in your subconscious

mind. So, when you re-experience the event of standing outside the Martian Palace with a thirst, you go on to the Starway, or Nhergal's, or some other bar. In both cases, on both time-lines, you follow the line of maximum probability; in the second case, your subconscious future memories are an added causal factor."

"And when I back-slip, after I've been needled, I generate a new time-line? Is that it?"

Verkan Vall made a small sound of impatience. "No such thing!" he exclaimed. "It's semantically inadmissible to talk about the total presence of time with one breath and about generating new time-lines with the next. *All* time-lines are totally present, in perpetual co-existence. The theory is that the EPC passes from one moment, on one time-line, to the next moment on the next line, so that the true passage of the EPC from moment to moment is a two-dimensional diagonal. So, in the case we're using, the event of your going into the Martian Palace exists on one time-line, and the event of your passing along to the Starway exists on another, but both are events in real existence.

"Now, what we do, in paratime transposition, is to build up a hyper-temporal field to include the time-line we want to reach, and then shift over to it. Same point in the plenum; same point in primary time—plus primary time elapsed during mechanical and electronic lag in the relays—but a different line of secondary time."

"Then why don't we have past-future time travel on our own time-line?" the pilot wanted to know.

That was a question every paratimer has to answer, every time he talks paratime to the laity. Verkan Vall had been expecting it; he answered patiently.

"The Ghaldron-Hesthor field-generator is like every other mechanism; it can operate only in the area of primary time in which it exists. It can transpose to any other time-line, and carry with it anything inside its field, but it can't go outside its own temporal area of existence, any more than a bullet from that rifle can hit the target a week before it's fired," Verkan Vall pointed out. "Anything inside the field is supposed to be unaffected by anything outside. *Supposed to be* is the way to put it; it doesn't always work. Once in a while, something pretty nasty gets picked up in transit." He thought, briefly, of the man in the black tunic. "That's why we have armed guards at terminals."

"Suppose you pick up a blast from a nucleonic bomb," the pilot asked, "or something red-hot, or radioactive?"

"We have a monument, at Paratime Police Headquarters, in Dhergabar, bearing the names of our own personnel who didn't make it back. It's a large monument; over the past ten thousand years, it's been inscribed with quite a few names."

"You can have it; I'll stick to rockets!" the pilot replied. "Tell

me another thing, though: What's all this about levels, and sectors, and belts? What's the difference?"

"Purely arbitrary terms. There are five main probability levels, derived from the five possible outcomes of the attempt to colonize this planet, seventy-five thousand years ago. We're on the First Level —complete success, and colony fully established. The Fifth Level is the probability of complete failure—no human population established on this planet, and indigenous quasi-human life evolved indigenously. On the Fourth Level, the colonists evidently met with some disaster and lost all memory of their extraterrestrial origin, as well as all extraterrestrial culture. As far as they know, they are an indigenous race; they have a long pre-history of stone-age savagery.

"Sectors are areas of paratime on any level in which the prevalent culture has a common origin and common characteristics. They are divided more or less arbitrarily into sub-sectors. Belts are areas within sub-sectors where conditions are the result of recent alternate probabilities. For instance, I've just come from the Europo-American Sector of the Fourth Level, an area of about ten thousand parayears in depth, in which the dominant civilization developed on the North-West Continent of the Major Land Mass, and spread from there to the Minor Land Mass. The line on which I was operating is also part of a sub-sector of about three thousand parayears' depth, and a belt developing from one of several probable outcomes of a war concluded about three elapsed years ago. On that time-line, the field at the Hagraban Synthetics Works, where we took off, is part of an abandoned farm; on the site of Hagraban City is a little farming village. Those things are there, right now, both in primary time and in the plenum. They are about two hundred and fifty thousand parayears perpendicular to each other, and each is of the same general order of reality."

The red light overhead flashed on. The pilot looked into his visor and put his hands to the manual controls, in case of failure of the robot controls. The rocket landed smoothly, however; there was a slight jar as it was grappled by the crane and hoisted upright, the seats turning in their gimbals. Pilot and passenger unstrapped themselves and hurried through the refrigerated outlet and away from the glowing-hot rocket.

An air-taxi, emblazoned with the device of the Paratime Police, was waiting. Verkan Vall said goodby to the rocket-pilot and took his seat beside the pilot of the aircab; the latter lifted his vehicle above the building level and then set it down on the landing-stage of the Paratime Police Building in a long, side-swooping glide. An express elevator took Verkan Vall down to one of the middle stages, where he showed his sigil to the guard outside the door of Tortha Karf's office and was admitted at once.

The Paratime Police chief rose

from behind his semicircular desk, with its array of keyboards and viewing-screens and communicators. He was a big man, well past his two hundredth year; his hair was iron-gray and thinning in front, he had begun to grow thick at the waist, and his calm features bore the lines of middle age. He wore the dark-green uniform of the Paratime Police.

"Well, Vall," he greeted. "Everything secure?"

"Not exactly, sir." Verkan Vall came around the desk, deposited his rifle and bag on the floor, and sat down in one of the spare chairs. "I'll have to go back again."

"So?" His chief lit a cigarette and waited.

"I traced Gavran Sarn." Verkan Vall got out his pipe and began to fill it. "But that's only the beginning. I have to trace something else. Gavran Sarn exceeded his Paratime permit, and took one of his pets along. A Venusian night-hound."

Tortha Karf's expression did not alter; it merely grew more intense. He used one of the short, semantically ugly terms which serve, in place of profanity, as the emotional release of a race that has forgotten all the taboos and terminologies of supernaturalistic religion and sex-inhibition.

"You're sure of this, of course."—It was less a question than a statement.

Verkan Vall bent and took cloth-wrapped objects from his bag, unwrapping them and laying them on the desk. They were casts, in hard black plastic, of the footprints of some large three-toed animal.

"What do these look like, sir?" he asked.

Tortha Karf fingered them and nodded. Then he became as visibly angry as a man of his civilization and culture-level ever permitted himself.

"What does that fool think we have a Paratime Code for?" he demanded. "It's entirely illegal to transpose any extraterrestrial animal or object to any time-line on which space-travel is unknown. I don't care if he is a green-seal thavrad; he'll face charges, when he gets back, for this!"

"He *was* a green-seal thavrad," Verkan Vall corrected. "And he won't be coming back."

"I hope you didn't have to deal summarily with him," Tortha Karf said. "With his title, and social position, and his family's political importance, that might make difficulties. Not that it wouldn't be all right with me, of course, but we never seem to be able to make either the Management or the public realize the extremities to which we are forced, at times." He sighed. "We probably never shall."

Verkan Vall smiled faintly. "Oh, no, sir; nothing like that. He was dead before I transposed to that time-line. He was killed when he wrecked a self-propelled vehicle he was using. One of those Fourth Level automobiles. I posed as a relative and tried to claim his body for the burial-ceremony observed on that cultural level, but was told that it had been completely de-

stroyed by fire when the fuel tank of this automobile burned. I was given certain of his effects which had passed through the fire; I found his sigil concealed inside what appeared to be a cigarette case." He took a green disk from the bag and laid it on the desk. "There's no question; Gavran Sarn died in the wreck of that automobile."

"And the nighthound?"

"It was in the car with him, but it escaped. You know how fast those things are. I found that track"—he indicated one of the black casts—"in some dried mud near the scene of the wreck. As you see, the cast is slightly defective. The others were fresh this morning, when I made them."

"And what have you done so far?"

"I rented an old farm near the scene of the wreck, and installed my field-generator there. It runs through to the Hagraban Synthetics Works, about a hundred miles east of Thalna-Jarvizar. I have my this-line terminal in the girls' rest room at the durable plastics factory; handled that on a local police-power writ. Since then, I've been hunting for the nighthound. I think I can find it, but I'll need some special equipment, and a hypno-mech indoctrination. That's why I came back."

"Has it been attracting any attention?" Tortha Karf asked anxiously.

"Killing cattle in the locality; causing considerable excitement. Fortunately, it's a locality of forested mountains and valley farms, rather than a built-up industrial district. Local police and wild-game protection officers are concerned; all the farmers excited, and going armed. The theory is that it's either a wildcat of some sort, or a maniac armed with a cutlass. Either theory would conform, more or less, to the nature of its depredations. Nobody has actually seen it."

"That's good!" Tortha Karf was relieved. "Well, you'll have to go and bring it out, or kill it and obliterate the body. You know why, as well as I do."

"Certainly, sir." Verkan Vall replied. "In a primitive culture, things like this would be assigned supernatural explanations, and imbedded in the locally accepted religion. But this culture, while nominally religious, is highly rationalistic in practice. Typical lag-effect, characteric of all expanding cultures. And this Europo-American Sector really has an expanding culture. A hundred and fifty years ago, the inhabitants of this particular time-line didn't even know how to apply steam power; now they've begun to release nuclear energy, in a few crude forms."

Tortha Karf whistled, softly. "That's quite a jump. There's a sector that'll be in for trouble, in the next few centuries."

"That is realized, locally, sir." Verkan Vall concentrated on relighting his pipe, for a moment, then continued: "I would predict space-travel on that sector within the next century. Maybe the next

half-century, at least to the Moon. And the art of taxidermy is very highly developed. Now, suppose some farmer shoots that thing; what would he do with it, sir?"

Tortha Karf grunted. "Nice logic, Vall. On a most uncomfortable possibility. He'd have it mounted, and it'd be put in a museum, somewhere. And as soon as the first spaceship reaches Venus, and they find those things in a wild state, they'll have the mounted specimen identified."

"Exactly. And then, instead of beating their brains about *where* their specimen came from, they'll begin asking *when* it came from. They're quite capable of such reasoning, even now."

"A hundred years isn't a particularly long time," Tortha Karf considered. "I'll be retired, then, but you'll have my job, and it'll be your headache. You'd better get this cleaned up, now, while it can be handled. What are you going to do?"

"I'm not sure, now, sir. I want a hypno-mech indoctrination, first." Verkan Vall gestured toward the communicator on the desk. "May I?" he asked.

"Certainly." Tortha Karf slid the instrument across the desk. "Anything you want."

"Thank you, sir." Verkan Vall snapped on the code-index, found the symbol he wanted, and then punched it on the keyboard. "Special Chief's Assistant Verkan Vall," he identified himself. "Speaking from office of Tortha Karf, Chief Paratime Police. I want a complete hypno-mech on Venusian night-hounds, emphasis on wild state, special emphasis domesticated night-hounds reverted to wild state in terrestrial surroundings, extra-special emphasis hunting techniques applicable to same. The word 'nighthound' will do for trigger-symbol." He turned to Tortha Karf. "Can I take it here?"

Tortha Karf nodded, pointing to a row of booths along the far wall of the office.

"Make set-up for wired transmission; I'll take it here."

"Very well, sir; in fifteen minutes," a voice replied out of the communicator.

Verkan Vall slid the communicator back. "By the way, sir; I had a hitchhiker, on the way back. Carried him about a hundred or so parayears; picked him up about three hundred parayears after leaving my other-line terminal. Nasty-looking fellow, in a black uniform; looked like one of these private-army storm troopers you find all through that sector. Armed, and hostile. I thought I'd have to ray him, but he blundered outside the field almost at once. I have a record, if you'd care to see it."

"Yes, put it on." Tortha Karf gestured toward the solidograph-projector. "It's set for miniature reproduction here on the desk; that be all right?"

Verkan Vall nodded, getting out the film and loading it into the projector. When he pressed a button, a dome of radiance appeared on the desk top, two feet in width and a foot in height. In the middle of this appeared a small solidograph image of the interior of the conveyor, showing the desk, and the control board, and the figure of Verkan Vall seated at it. The little figure of the storm trooper appeared, pistol in hand. The little Verkan Vall snatched up his tiny needler; the storm trooper moved into one side of the dome and vanished.

Verkan Vall flipped a switch and cut out the image.

"Yes. I don't know what causes that, but it happens, now and then," Tortha Karf said. "Usually at the beginning of a transposition. I remember, when I was just a kid, about a hundred and fifty years ago—a hundred and thirty-nine, to be exact—I picked up a fellow on the Fourth Level, just about where you're operating, and dragged him a couple of hundred parayears. I went back to find him and return him to his own time-line, but before I could locate him, he'd been ar-

rested by the local authorities as a suspicious character, and got himself shot trying to escape. I felt badly about that, but—" Tortha Karf shrugged. "Anything else happen on the trip?"

"I ran through a belt of intermittent nucleonic bombing on the Second Level." Verkan Vall mentioned an approximate paratime location.

"Aaagh! That Khiftan civilization—by courtesy so called!" Tortha Karf pulled a wry face. "I suppose the intra-family enmities of the Hvadka Dynasty have reached critical mass again. They'll fool around till they blast themselves back to the stone age."

"Intellectually, they're about there, now. I had to operate in that sector, once— Oh, yes, another thing, sir. This rifle." Verkan Vall picked it up, emptied the magazine and handed it to his superior. "The supplies office slipped up on this; it's not appropriate to my line of operation. It's a lovely rifle, but it's about two hundred percent in advance of existing arms design on my line. It excited the curiosity of a couple of police officers and a game protector, who should be familiar with the weapons of their own time-line. I evaded by disclaiming ownership or intimate knowledge, and they seemed satisfied, but it worried me."

"Yes. That was made in our duplicating shops, here in Dhergabar." Tortha Karf carried it to a photographic bench, behind his desk. "I'll have it checked, while you're taking your hypno-mech. Want to exchange it for something authentic?"

"Why, no, sir. It's been identified to me, and I'd excite less suspicion with it than I would if I abandoned it and mysteriously acquired another rifle. I just wanted a check, and Supplies warned to be more careful in future."

Tortha Karf nodded approvingly. The young Mavrad of Nerros was thinking as a paratimer should.

"What's the designation of your line, again?"

Verkan Vall told him. It was a short numerical term of six places, but it expressed a number of the order of ten to the fortieth power, exact to the last digit. Tortha Karf repeated it into his stenomemograph, with explanatory comment.

"There seems to be quite a few things going wrong, in that area," he said. "Let's see, now."

He punched the designation on a keyboard; instantly, it appeared on a translucent screen in front of him. He punched another combination, and, at the top of the screen, under the number, there appeared:

EVENTS, PAST ELAPSED FIVE YEARS.

He punched again; below this line appeared the sub-heading:

EVENTS INVOLVING PARATIME TRANSPOSITION.

Another code-combination added a third line:

(ATTRACTING PUBLIC NOTICE AMONG INHABITANTS.)

He pressed the "start"-button; the headings vanished, to be replaced by page after page of print, succeeding one another on the screen as the two men read. They told strange and apparently disconnected stories—of unexplained fires and explosions; of people vanishing without trace; of unaccountable disasters to aircraft. There were many stories of an epidemic of mysterious disk-shaped objects seen in the sky, singly or in numbers. To each account was appended one or more reference-numbers. Sometimes Tortha Karf or Verkan Vall would punch one of these, and read, on an adjoining screen, the explanatory matter referred to.

Finally Tortha Karf leaned back and lit a fresh cigarette.

"Yes, indeed, Vall; very definitely we will have to take action in the matter of the runaway nighthound of the late Gavran Sarn," he said. "I'd forgotten that that was the time-line onto which the *Ardrath* expedition launched those antigrav disks. If this extraterrestrial monstrosity turns up, on the heels of that 'Flying Saucer' business, everybody above the order of intelligence of a cretin will suspect some connection."

"What really happened, in the *Ardrath* matter?" Verkan Vall inquired. "I was on the Third Level, on that Luvarian Empire operation, at the time."

"That's right; you missed that. Well, it was one of these joint-operation things. The Paratime Commission and the Space Patrol were experimenting with a new technique for throwing a spaceship into paratime. They used the cruiser *Ardrath*, Kalzarn Jann commanding. Went into space about halfway to the Moon and took up orbit, keeping on the sunlit side of the planet to avoid being observed. That was all right. But then, Captain Kalzarn ordered away a flight of antigrav disks, fully manned, to take pictures, and finally authorized a landing in the western mountain range, Northern Continent, Minor Land-Mass. That's when the trouble started."

He flipped the run-back switch, till he had recovered the page he wanted. Verkan Vall read of a Fourth Level aviator, in his little airscrew-drive craft, sighting nine high-flying saucerlike objects.

"That was how it began," Tortha Karf told him. "Before long, as other incidents of the same sort occurred, our people on that line began sending back to know what was going on. Naturally, from the different descriptions of these 'saucers', they recognized the objects as antigrav landing-disks from a spaceship. So I went to the Commission and raised atomic blazes about it, and the *Ardrath* was ordered to confine operations to the lower areas of the Fifth Level. Then our people on that time-line went to work with corrective action. Here."

He wiped the screen and then began punching combinations. Page after page appeared, bearing accounts of people who had claimed to have seen the mysterious disks,

and each report was more fantastic than the last.

"The standard smother-out technique." Verkan Vall grinned. "I only heard a little talk about the 'Flying Saucers', and all of that was in joke. In that order of culture, you can always discredit one true story by setting up ten others, palpably false, parallel to it— Wasn't that the time-line the Tharmax Trading Corporation almost lost their paratime license on?"

"That's right; it was! They bought up all the cigarettes, and caused a conspicuous shortage, after Fourth Level cigarettes had been introduced on this line and had become popular. They should have spread their purchases over a number of lines, and kept them within the local supply-demand frame. And they also got into trouble with the local government for selling unrationed petrol and automobile tires. We had to send in a special-operations group, and they came closer to having to engage in out-time local politics than I care to think of." Tortha Karf quoted a line from a currently popular song about the sorrows of a policeman's life. "We're jugglers, Vall; trying to keep our traders and sociological observers and tourists and plain idiots like the late Gavran Sarn out of trouble; trying to prevent panics and disturbances and dislocations of local economy as a result of our operations; trying to keep out of out-time politics—and, at all times, at all costs and hazards, by all means, guarding the secret of paratime transposition. Sometimes I wish Ghaldron Karf and Hesthor Ghrom had strangled in their cradles!"

Verkan Vall shook his head. "No, chief," he said. "You don't mean that; not really," he said. "We've been paratiming for the past ten thousand years. When the Ghaldron-Hesthor trans-temporal field was discovered, our ancestors had pretty well exhausted the resources of this planet. We had a world population of half a billion, and it was all they could do to keep alive. After we began paratime transposition, our population climbed to ten billion, and there it stayed for the last eight thousand years. Just enough of us to enjoy our planet and the other planets of the system to the fullest; enough of everything for everybody that nobody needs fight anybody for anything. We've tapped the resources of those other worlds on other time-lines, a little here, a little there, and not enough to really hurt anybody. We've left our mark in a few places —the Dakota Badlands, and the Gobi, on the Fourth Level, for instance—but we've done no great damage to any of them."

"Except the time they blew up half the Southern Island Continent, over about five hundred parayears on the Third Level," Tortha Karf mentioned.

"Regrettable accident, to be sure," Verkan Vall conceded. "And look how much we've learned from the experiences of those other time-lines. During the Crisis, after the Fourth Interplanetary War,

we might have adopted Palnar Sarn's 'Dictatorship of the Chosen' scheme, if we hadn't seen what an exactly similar scheme had done to the Jak-Hakka Civilization, on the Second Level. When Palnar Sarn was told about that, he went into paratime to see for himself, and when he returned, he renounced his proposal in horror."

Tortha Karf nodded. He wouldn't be making any mistake in turning his post over to the Mavrad of Nerros on his retirement.

"Yes, Vall; I know," he said. "But when you've been at this desk as long as I have, you'll have a sour moment or two, now and then, too."

A blue light flashed over one of the booths across the room. Verkan Vall got to his feet, removing his coat and hanging it on the back of his chair, and crossed the room, rolling up his left shirt sleeve. There was a relaxer-chair in the booth, with a blue plastic helmet above it. He glanced at the indicator-screen to make sure he was getting the indoctrination he called for, and then sat down in the chair and lowered the helmet over his head, inserting the ear plugs and fastening the chin strap. Then he touched his left arm with an injector which was lying on the arm of the chair, and at the same time flipped the starter switch.

Soft, slow music began to chant out of the earphones. The insidious fingers of the drug blocked off his senses, one by one. The music diminished, and the words of the hypnotic formula lulled him to sleep.

He woke, hearing the lively strains of dance music. For a while, he lay relaxed. Then he snapped off the switch, took out the ear plugs, removed the helmet and rose to his feet. Deep in his subconscious mind was the entire body of knowledge about the Venusian nighthound. He mentally pronounced the word, and at once it began flooding into his conscious mind. He knew the animal's evolutionary history, its anatomy, its characteristics, its dietary and reproductive habits, how it hunted, how it fought its enemies, how it eluded pursuit, and how best it could be tracked down and killed. He nodded. Already, a plan for dealing with Gavran Sarn's renegade pet was taking shape in his mind.

He picked a plastic cup from the dispensor, filled it from a cooler-tap with amber-colored spiced wine, and drank, tossing the cup into the disposal-bin. He placed a fresh injector on the arm of the chair, ready for the next user of the booth. Then he emerged, glancing at his Fourth Level wrist watch and mentally translating to the First Level time-scale. Three hours had passed; there had been more to learn about his quarry than he had expected.

Tortha Karf was sitting behind his desk, smoking a cigarette. It seemed as though he had not moved since Verkan Vall had left him, though the special agent knew that he had dined, attended several con-

ferences, and done many other things.

"I checked up on your hitchhiker, Vall," the chief said. "We won't bother about him. He's a member of something called the Christian Avengers—one of those typical Europo-American race-and-religious hate groups. He belongs in a belt that is the outcome of the Hitler victory of 1940, whatever that was. Something unpleasant, I daresay. We don't owe him anything; people of that sort should be stepped on, like cockroaches. And he won't make any more trouble on the line where you dropped him than they have there already. It's in a belt of complete social and political anarchy; somebody probably shot him as soon as he emerged, because he wasn't wearing the right sort of a uniform. Nineteen-forty what, by the way?"

"Elapsed years since the birth of some religious leader," Verkan Vall explained. "And did you find out about my rifle?"

"Oh, yes. It's reproduction of something that's called a Sharp's Model '37,235 Ultraspeed-Express. Made on an adjoining paratime belt by a company that went out of business sixty-seven years ago, elapsed time, on your line of operation. What made the difference was the Second War Between The States. I don't know what that was, either—I'm not too well up on Fourth Level history—but whatever, your line of operation didn't have it. Probably just as well for them, though they very likely had something else, as bad or worse. I put in a complaint to Supplies about it, and got you some more ammunition and reloading tools. Now, tell me what you're going to do about this nighthound business."

Tortha Karf was silent for a while, after Verkan Vall had finished.

"You're taking some awful chances, Vall," he said, at length. "The way you plan doing it, the advantages will all be with the nighthound. Those things can see as well at night as you can in daylight. I suppose you know that, though; you're the nighthound specialist, now."

"Yes. But they're accustomed to the Venus hotland marshes; it's been dry weather for the last two weeks, all over the northeastern section of the Northern Continent. I'll be able to hear it, long before it gets close to me. And I'll be wearing an electric headlamp. When I snap that on, it'll be dazzled, for a moment."

"Well, as I said, you're the nighthound specialist. There's the communicator; order anything you need." He lit a fresh cigarette from the end of the old one before crushing it out. "But be careful, Vall. It took me close to forty years to make a paratimer out of you; I don't want to have to repeat the process with somebody else before I can retire."

The grass was wet as Verkan Vall—who reminded himself that here he was called Richard Lee—crossed the yard from the farm-

house to the ramshackle barn, in the early autumn darkness. It had been raining that morning when the strato-rocket from Dhergabar had landed him at the Hagraban Synthetics Works, on the First Level; unaffected by the probabilities of human history, the same rain had been coming down on the old Kinchwalter farm, near Rutter's Fort, on the Fourth Level. And it had persisted all day, in a slow, deliberate drizzle.

He didn't like that. The woods would be wet, muffling his quarry's footsteps, and canceling his only advantage over the night-prowler he hunted. He had no idea, however, of postponing the hunt. If anything, the rain had made it all the more imperative that the nighthound be killed at once. At this season, a falling temperature would speedily follow. The nighthound, a creature of the hot Venus marshes, would suffer from the cold, and, taught by years of domestication to find warmth among human habitations, it would invade some isolated farmhouse, or, worse, one of the little valley villages. If it were not killed tonight, the incident he had come to prevent would certainly occur.

Going to the barn, he spread an old horse blanket on the seat of the jeep, laid his rifle on it, and then backed the jeep outside. Then he took off his coat, removing his pipe and tobacco from the pockets, and, spread it on the wet grass. He unwrapped a package and took out a small plastic spray-gun he had brought with him from the First Level, aiming it at the coat and pressing the trigger until it blew itself empty. A sickening, rancid fetor tainted the air—the scent of the giant poison-roach of Venus, the one creature for which the nighthound bore an inborn, implacable hatred. It was because of this compulsive urge to attack and kill the deadly poison-roach that the first human settlers on Venus, long millennia ago, had domesticated the ugly and savage nighthound. He remembered that the Gavran family derived their title from their vast Venus hotlands estates; that Gavran Sarn, the man who had brought this thing to the Fourth Level, had been born on the inner planet. When Verkan Vall donned that coat, he would become his own living bait for the murderous fury of the creature he sought. At the moment, mastering his queasiness and putting on the coat, he objected less to that danger than to the hideous stench of the scent, to obtain which a valuable specimen had been sacrificed at the Dhergabar Museum of Extraterrestrial Zoology, the evening before.

Carrying the wrapper and the spray-gun to an outside fireplace, he snapped his lighter to them and tossed them in. They were highly inflammable, blazing up and vanishing in a moment. He tested the electric headlamp on the front of his cap; checked his rifle; drew the heavy revolver, an authentic product of his line of operation, and flipped the cylinder out and in again. Then he got into the jeep and drove away.

For half an hour, he drove quickly along the valley roads. Now and then, he passed farmhouses, and dogs, puzzled and angered by the alien scent his coat bore, barked furiously. At length, he turned into a back road, and from this to the barely discernible trace of an old log road. The rain had stopped, and, in order to be ready to fire in any direction at any time, he had removed the top of the jeep. Now he had to crouch below the windshield to avoid overhanging branches. Once three deer—a buck and two does—stopped in front of him and stared for a moment, then bounded away with a flutter of white tails.

He was driving slowly, now; laying behind him a reeking trail of scent. There had been another stock-killing, the night before, while he had been on the First Level. The locality of this latest depredation had confirmed his estimate of the beast's probable movements, and indicated where it might be prowling, tonight. He was certain that it was somewhere near; sooner or later, it would pick up the scent.

Finally, he stopped, snapping out his lights. He had chosen this spot carefully, while studying the Geological Survey map, that afternoon; he was on the grade of an old railroad line, now abandoned and its track long removed, which had served the logging operations of fifty years ago. On one side, the mountain slanted sharply upward; on the other, it fell away sharply. If the nighthound were below him, it would have to climb that forty-five degree slope, and could not avoid dislodging loose stones, or otherwise making a noise. He would get out on that side; if the nighthound were above him, the jeep would protect him when it charged. He got to the ground, thumbing off the safety of his rifle, and an instant later he knew that he had made a mistake which could easily cost him his life; a mistake from which neither his comprehensive logic nor his hypnotically acquired knowledge of the beast's habits had saved him.

As he stepped to the ground, facing toward the front of the jeep, he heard a low, whining cry behind him, and a rush of padded feet. He whirled, snapping on the headlamp with his left hand and thrusting out his rifle pistol-wise in his right. For a split second, he saw the charging animal, its long, lizardlike head split in a toothy grin, its talon-tipped fore-paws extended.

He fired, and the bullet went wild. The next instant, the rifle was knocked from his hand. Instinctively, he flung up his left arm to shield his eyes. Claws raked his left arm and shoulder, something struck him heavily along the left side, and his cap-light went out as he dropped and rolled under the jeep, drawing in his legs and fumbling under his coat for the revolver.

In that instant, he knew what had gone wrong. His plan had been entirely too much of a success. The nighthound had winded him as he had driven up the old railroad-grade, and had followed. Its best running speed had been just good

enough to keep it a hundred or so feet behind the jeep, and the motor-noise had covered the padding of its feet. In the few moments between stopping the little car and getting out, the nighthound had been able to close the distance and spring upon him.

It was characteristic of First-Level mentality that Verkan Vall wasted no moments on self-reproach or panic. While he was still rolling under his jeep, his mind had been busy with plans to retrieve the situation. Something touched the heel of one boot, and he froze his leg into immobility, at the same time trying to get the big Smith & Wesson free. The shoulder-holster, he found, was badly torn, though made of the heaviest skirting-leather, and the spring which retained the weapon in place had been wrenched and bent until he needed both hands to draw. The eight-inch slashing-claw of the nighthound's right intermediary limb had raked him; only the instinctive motion of throwing up his arm, and the fact that he wore the revolver in a shoulder-holster, had saved his life.

The nighthound was prowling around the jeep, whining frantically. It was badly confused. It could see quite well, even in the close darkness of the starless night; its eyes were of a nature capable of perceiving infrared radiations as light. There were plenty of these; the jeep's engine, lately running on four-wheel drive, was quite hot. Had he been standing alone, especially on this raw, chilly night, Ver-

kan Vall's own body-heat would have lighted him up like a jack-o'-lantern. Now, however, the hot engine above him masked his own radiations. Moreover, the poison-roach scent on his coat was coming up through the floor board and mingling with the scent on the seat, yet the nighthound couldn't find the two-and-a-half foot insectlike thing that should have been producing it. Verkan Vall lay motionless, wondering how long the next move would be in coming. Then he heard a thud above him, followed by a furious tearing as the nighthound ripped the blanket and began rending at the seat cushion.

"Hope it gets a paw-full of seat-springs." Verkan Vall commented mentally. He had already found a stone about the size of his two fists, and another slightly smaller, and had put one in each of the side pockets of the coat. Now he slipped his revolver into his waist-belt and writhed out of the coat, shedding the ruined shoulder-holster at the same time. Wriggling on the flat of his back, he squirmed between the rear wheels, until he was able to sit up, behind the jeep. Then, swinging the weighted coat, he flung it forward, over the nighthound and the jeep itself, at the same time drawing his revolver.

Immediately, the nighthound, lured by the sudden movement of the principal source of the scent, jumped out of the jeep and bounded after the coat, and there was considerable noise in the brush on the lower side of the railroad grade. At once, Verkan Vall swarmed into the jeep and snapped on the lights.

His stratagem had succeeded beautifully. The stinking coat had landed on the top of a small bush, about ten feet in front of the jeep and ten feet from the ground. The nighthound, erect on its haunches, was reaching out with its front paws to drag it down, and slashing angrily at it with its single-clawed intermediary limbs. Its back was to Verkan Vall.

His sights clearly defined by the lights in front of him, the paratimer centered them on the base of the creature's spine, just above its secondary shoulders, and carefully squeezed the trigger. The big .357 Magnum bucked in his hand and belched flame and sound—if only these Fourth Level weapons weren't so confoundedly boisterous!—and the nighthound screamed and fell. Recocking the revolver, Verkan Vall waited for an instant, then nodded in satisfaction. The beast's spine had been smashed, and its hind quarters, and even its intermediary fighting limbs had been paralyzed. He aimed carefully for a second shot and fired into the base of the thing's skull. It quivered and died.

Getting a flashlight, he found his rifle, sticking muzzle-down in the mud a little behind and to the right of the jeep, and swore briefly in the local Fourth Level idiom, for Verkan Vall was a man who loved good weapons, be they sigma-ray needlers, neutron-disruption blasters, or the solid-missile projectors of the

lower levels. By this time, he was feeling considerable pain from the claw-wounds he had received. He peeled off his shirt and tossed it over the hood of the jeep.

Tortha Karf had advised him to carry a needler, or a blaster, or a neurostat-gun, but Verkan Vall had been unwilling to take such arms onto the Fourth Level. In event of mishap to himself, it would be all too easy for such a weapon to fall into the hands of someone able to deduce from it scientific principles too far in advance of the general Fourth Level culture. But there had been one First Level item which he had permitted himself, mainly because, suitably packaged, it was not readily identifiable as such. Digging a respectable Fourth-Level leatherette case from under the seat, he opened it and took out a pint bottle with a red poison-label, and a towel. Saturating the towel with the contents of the bottle, he rubbed every inch of his torso with it, so as not to miss even the smallest break made in his skin by the septic claws of the nighthound. Whenever the lotion-soaked towel touched raw skin, a pain like the burn of a hot iron shot through him; before he was through, he was in agony. Satisfied that he had disinfected every wound, he dropped the towel and clung weakly to the side of the jeep. He grunted out a string of English oaths, and capped them with an obscene Spanish blasphemy he had picked up among the Fourth Level inhabitants of his island home of Nerros, to the south, and a thundering curse in the name of Mogga, Fire-God of Dool, in a Third-Level tongue. He mentioned Fasif, Great God of Khift, in a manner which would have got him an acid-bath if the Khiftan priests had heard him. He alluded to the baroque amatory practices of the Third-Level Illyalla people, and soothed himself, in the classical Dar-Halma tongue, with one of those rambling genealogical insults favored in the Indo-Turanian Sector of the Fourth Level.

By this time, the pain had subsided to an over-all smarting itch. He'd have to bear with that until his work was finished and he could enjoy a hot bath. He got another bottle out of the first-aid kit—a flat pint, labeled "Old Overholt," containing a locally-manufactured specific for inward and subjective wounds—and medicated himself copiously from it, corking it and slipping it into his hip pocket against future need. He gathered up the ruined shoulder-holster and threw it under the back seat. He put on his shirt. Then he went and dragged the dead nighthound onto the grade by its stumpy tail.

It was an ugly thing, weighing close to two hundred pounds, with powerfully muscled hind legs which furnished the bulk of its motive-power, and sturdy three-clawed front legs. Its secondary limbs, about a third of the way back from its front shoulders, were long and slender; normally, they were carried folded closely against the body, and each was armed with a single curving claw. The revolver-bullet had gone in at the base of the skull

and emerged under the jaw; the head was relatively undamaged. Verkan Vall was glad of that; he wanted that head for the trophy-room of his home on Nerros. Grunting and straining, he got the thing into the back of the jeep, and flung his almost shredded tweed coat over it.

A last look around assured him that he had left nothing unaccountable or suspicious. The brush was broken where the nighthound had been tearing at the coat; a bear might have done that. There were splashes of the viscid stuff the thing had used for blood, but they wouldn't be there long. Terrestrial rodents liked nighthound blood, and the woods were full of mice. He climbed in under the wheel, backed, turned, and drove away.

Inside the paratime-transposition dome, Verkan Vall turned from the body of the nighthound, which he had just dragged in, and considered the inert form of another animal—a stump-tailed, tuft-eared, tawny Canada lynx. That particular animal had already made two paratime transpositions; captured in the vast wilderness of Fifth-Level North America, it had been taken to the First Level and placed in the Dhergabar Zoological Gardens, and then, requisitioned on the authority of Tortha Karf, it had been brought to the Fourth Level by Varkan Vall. It was almost at the end of all its travels.

Verkan Vall prodded the supine animal with the toe of his boot; it twitched slightly. Its feet were cross-bound with straps, but when he saw that the narcotic was wearing off, Verkan Vall snatched a syringe, parted the fur at the base of its neck, and gave it an injection. After a moment, he picked it up in his arms and carried it out to the jeep.

"All right, pussy cat," he said, placing it under the rear seat, "this is the one-way ride. The way you're doped up, it won't hurt a bit."

He went back and rummaged in the debris of the long-deserted barn. He picked up a hoe, and discarded it as too light. An old plowshare was too unhandy. He considered a grate-bar from a heating furnace, and then he found the poleax, lying among a pile of wormeaten boards. Its handle had been shortened, at some time, to about twelve inches, converting it into a heavy hatchet. He weighed it, and tried it on a block of wood, and then, making sure that the secret door was closed, he went out again and drove off.

An hour later, he returned. Opening the secret door, he carried the ruined shoulder holster, and the straps that had bound the bobcat's feet, and the ax, now splotched with blood and tawny cat-hairs, into the dome. Then he closed the secret room, and took a long drink from the bottle on his hip.

The job was done. He would take a hot bath, and sleep in the farmhouse till noon, and then he would return to the First Level. Maybe Tortha Karf would want him to come back here for a while. The situation on this time-line was

far from satisfactory, even if the crisis threatened by Gavran Sarn's renegade pet had been averted. The presence of a chief's assistant might be desirable.

At least, he had a right to expect a short vacation. He thought of the little redhead at the Hagraban Synthetics Works. What was her name? Something Kara—Morvan Kara; that was it. She'd be coming off shift about the time he'd make First Level, tomorrow afternoon.

The claw-wounds were still smarting vexatiously. A hot bath, and a night's sleep— He took another drink, lit his pipe, picked up his rifle and started across the yard to the house.

Private Zinkowski cradled the telephone and got up from the desk, stretching. He left the orderly-room and walked across the hall to the recreation room, where the rest of the boys were loafing. Sergeant Haines, in a languid gin-rummy game with Corporal Conner, a sheriff's deputy, and a mechanic from the service station down the road, looked up.

"Well, Sarge, I think we can write off those stock-killings," the private said.

"Yeah?" The sergeant's interest quickened.

"Yeah. I think the whatzit's had it. I just got a buzz from the railroad cops at Logansport. It seems a track-walker found a dead bobcat on the Logan River branch, about a mile or so below MMY signal tower. Looks like it tangled with that night freight up-river, and came off second best. It was near chopped to hamburger."

"MMY signal tower; that's right below Yoder's Crossing," the sergeant considered. "The Strawmyer farm night-before-last, the Amrine farm last night— Yeah, that would be about right."

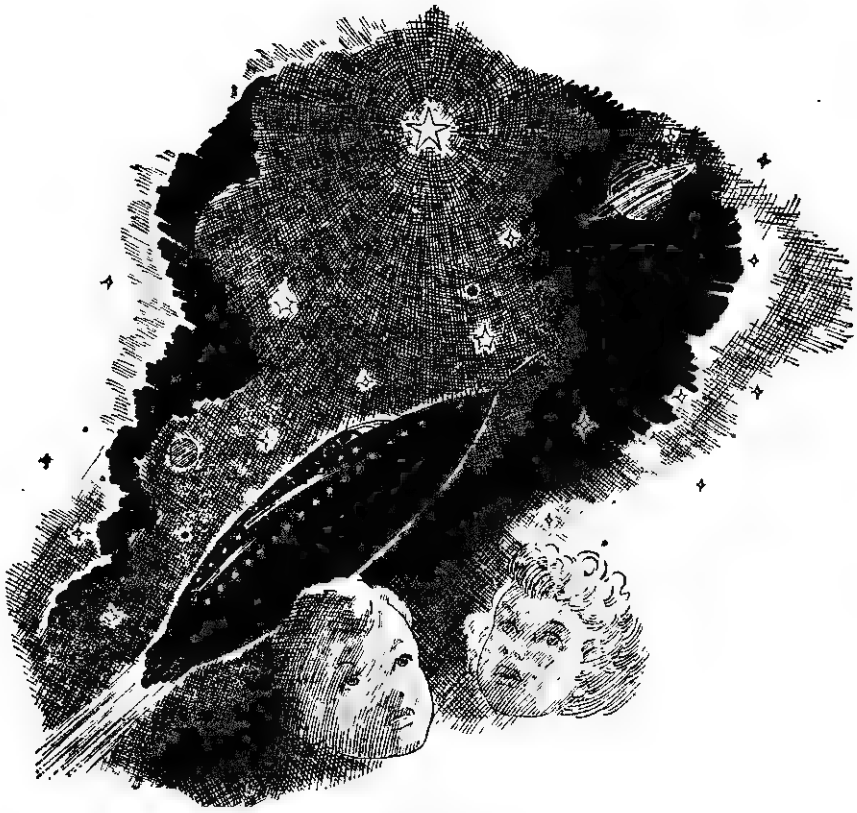
"That'll suit Steve Parker; bobcats aren't protected, so it's not his trouble. And they're not a violation of state law, so it's none of our worry," Conner said. "Your deal, isn't it, Sarge?"

"Yeah. Wait a minute." The sergeant got to his feet. "I promised Sam Kane, the AP man at Logansport, that I'd let him in on anything new." He got up and started for the phone. "Phantom Killer!" He blew an impolite noise.

"Well, it was a lot of excitement, while it lasted," the deputy sheriff said. "Just like that Flying Saucer thing."

THE END

★ ★ ★ ★ ★ ★ ★ ★ ★



DECISION ILLOGICAL

BY NEAL B. WILKINSON

***The** way men insanely took off into interstellar space was simply inexplicable. That one man might go haywire—but that a whole crew should make that decision seemed illogical. Because none of those left behind ever learned the full facts,*

Illustrated by Orban

The Solar Sek placed the report in front of his chief.

"Here it is, sir. The additional data has been verified by all departments."

"How soon?"

"It is closer than we thought. There is very little time left."

The barrier vanished, and the Psychomed entered the room. The Omnipote dimmed the flashing legends on the telescon and turned.

"Three more freighters left the system."

The Psychomed shrugged. "The recommendations of my department were not followed. Every crew that has gone beyond has had lower than a Three S.R."

"If we Terra-tied everyone, as you advocate, with below Three Space Rating, we wouldn't have enough spacemen left to handle traffic to Luna."

"The S.R. Quotient is variable," defended the Psychomed. "If, when a veteran's S.R. drops, he were given all the pleasures that Terra had to offer, his rating would jet back to norm."

"Yes," said the Omnipote wearily, "three months of riotous living at Spaceways' expense and the rating zooms. One planet hop and it plummets again."

"We can only make recommendations, sir. Our research has shown a definite relationship between the S.R. Quotient and the inclination to star wander. None of the theories advanced so far has given a satisfactory explanation of this so called 'space madness'. The most popular theory has weaknesses, but it forms a basis for establishing the standard space rating quotient. The theory that Homo sapiens, since the maximum velocity of spacecraft does not permit a trip to the next system *and return* within his life expectancy, has rebelled against the fact that spaceship velocity has not increased within three centuries. To expect men—who have gazed through the ports at the stars for centuries—not to go out, is like expecting a kid with a new rocket car not to leave the back yard."

"But distance equals rate-time. Time is a life span. The youngster has *time* to return to the back yard. Man does *not* have time to reach the next system—*and return.*"

"The answer isn't Psychomed responsibility, sir. Either lengthen T, suspended animation would be included there, increase R, and they claim that it is already a maximum, or shorten D—maybe the extra-dimensional boys will crack it that way."

"Hardly likely in our lifetime," the Omnipote grunted. "And I am responsible for all Solar travel *in this generation.* That is too tight a curve to blast through with a space mad bunch of jet jockeys striving to tear away from the strings of Sol. My job is as easy as pawning Saturn's rings. If I had good sense I would retire to Venus—and make mud pies!"

The Psychomed grinned as he left the room. Old Omny really fused his circuits when his vibratory rate was increased.

The Omnipote sat motionless after the Psychomed left. The Psychomed was a capable man, but he was a specialist, and he thought as a specialist was supposed to think. Space crews were leaving the system

for outer space. Those crews had below a Three S.R. Therefore the departmental solution was to earth all personnel who were below the Three level.

That was one department's answer, but it did not solve the large problem, and the Omnipote was concerned with the overall picture. Going beyond was not new. Since the beginning of interplanetary travel there had been those that soared off into outer space. Mostly disappointed lovers, who would have joined the Foreign Legion in ancient times, had roared off toward the stars, drowning their sorrow in the blazing thunder of the jets. Even at the present time there were religious prophets, who were recruiting funds and followers for huge space arks in which they would journey to a promised planet.

But the Omnipote was not concerned with lovesick young fools, or religious fanatics. His concern was veteran spacemen; why an ever increasing number of men who dealt with unchanging laws and immutable logic, should be afflicted with a seeming mass insanity.

The Omnipote pressed the Sek dial decisively. His problem was with those, that were even now, guiding, charting and feeding the flaming jets. He was the Omnipote of the Spaceways, and it was time for a personal reconnaissance.

"Jarda," he said, when the Sek appeared. "Spaceways has acquired a new astrogater. His name is Dyke Thorn. Thorn will make the 2206 Martian. Earth the old astrogater, and notify the captain that Thorn will board at 2145. Bring the complete gear and papers for Astrogator Thorn up here right away. My measurements—and see that the uniform looks like it has been worn before."

It was exactly twenty-one minutes before blast time, when the new astrogator climbed aboard the Martian freighter, *Homing Pigeon*. The dark platform was deserted, but as he stepped through the entrance tube, he saw a glimmer of light at the head of the companionway, and heard the murmur of voices as he approached. Evidently the crew had gathered in the control room to await the arrival of the new astrogator. He pushed the panel open and entered.

All three of them were lounging about the controls—captain, mate and engineer. Thorn approached the one with the insignia of Sol on his battered cap and saluted smartly.

"Sir, Astrogater Thorn reporting as per Spaceway Directive."

The captain grinned and waved a lanky arm at the vacant recoil couch.

"Skip the formalities, Thorn. Spaceways *had* to issue a directive to get anyone to board this heap. My name is Bill West.

"The alert and aggressive gentleman to my right," he continued, prodding the sprawled figure on the next couch, "is Lyle Dugan, our engineer."

Dugan waved a huge hand. "Harya, Thorn."

"And this," Captain West indicated a solemn youth, "is Jon Mill,

the mate. Jon always looks like that the first week out of Terra. I tell him that he will see her again next year, but Jon isn't sure. A pilot on the Luna shuttle sees her once a week."

Jon Mill smiled wanly. "Glad to blast with you, Thorn. As you've noticed, a chain reaction has started in our skipper's vocal chords."

The captain laughed. "And well it might. My only companions for a year are a lovesick kid, fresh out of school, and a descendant of Rip Van. Thorn, do you play dimensional chess?"

Thorn nodded. "My favorite game."

"Never met an astrogator yet that didn't think he was good. O. K., blast time. Strap in and Papa will start the jets singing farewell to this nasty old planet."

Dyke Thorn smiled as he strapped himself in the cushiony recesses of the recoil couch. Captain West was a spaceman of the old school. A freighter blast off was vicious. Freighters were not equipped with the expensive, fuel-consuming Gregories of the liners, and many captains considered it a privilege of their rank to be reclining in a couch, while the mate suffered at the controls.

A bell chimed on the instrument panel. Captain West dimmed the lights and snapped himself in the vertical recoil cylinder. The chimes started their measured cadence—*ting, ting, ting*. On the third *ting* he started the blast.

The cargo space required for the extra fuel under Gregory drive made anything but direct drive economically not feasible for freighters. Consequently freighter crews suffered more, had a shorter life expectancy, and drew higher pay ratio than their brothers on the liners. Thorn was reminded that direct blast was a young man's game. He blacked out.

Thorn opened his eyes. Captain West was still at the control panel, but he was out of the recoil cylinder. Acceleration was no longer a rending, tearing force. It was only a steady pull, not unpleasant.

Thorn looked at the instruments. The control room had pivoted; the floor was now parallel to Terra, and at right angles to the axis of the ship. Terra's pull plus acceleration totaled 1.73 G. Very soon the velocity would reach maximum, and the artigravs would be cut in, probably at only .1 G. Not much more could be afforded on the Martian run, but at least it would hold down circulatory troubles.

Thorn rose laboriously from the couch. West glanced back.

"I started the course on the astrocomp. Better wait to zenith before you make any corrections. Then you can see how far off the vibratory error has carried us. Until then you may as well struggle back to the galley. Mill and Dugan are back there now."

Thorn nodded weakly. He eased himself to the conveyor, snapped his belt on, and set the dial on "galley."

The companionway was a vertical world. Only the compartments had

rotated. The companionway floor had become a bulkhead, along which the conveyor pulled Thorn *up* to the galley. Thorn grimaced. In a spacecraft *up* was the direction that it took force to travel, and conversely *down* was the direction that it took force to keep from going. On a planetary approach *up* would become *down*, but spacemen made the change without a hitch in their daily conversation. Man may have conquered Solar space, but he still defined terms in the language of his ancestors.

The conveyor swung Thorn into the galley. Mill and Dugan were drinking Venusian *moka* and discussing the eternal problem of spacemen. When maximum velocity was reached, why did not an additional blast give acceleration?

Thorn smiled. As the Omnipote he had called in the greatest thinkers in that field. They could quote laws, and analogies, and base equations on the fact that it was a maximum, but as for explaining *why* it was a maximum, in simple language, they were at a loss. Man had not progressed in that respect since he first got the glimmerings in the Twentieth Century.

"Look," Dugan was saying, "we've just blasted off Terra. In a short while we'll have attained what is called our maximum. Now at that moment I can pour all the jets on—forced blast—and we accomplish nothing. Why doesn't our velocity increase?"

"The same reason that light from a searchbeam doesn't accelerate when you pour more juice through the filament."

"That's different. The light is brighter. You can account for the energy. But where does the energy from that blast at max go?"

"Why ask me, Duge? Maybe it increases the absolute motion of the universe. But I know *who* will pay for any fuel you waste blasting after max is reached. Spaceways isn't financing your experiments."

"Strangling truth with petty regulations," Dugan accused. "A bureaucrat stifling progress."

Mill smiled as he refilled his cup.

"We must be down to about one point five," he calculated, watching the flow of liquid.

Dugan glanced at Thorn. "Dyke, do you know why Cowan was relieved—the astrogator you replaced?"

Thorn shook his head. Mill looked puzzled.

"He was below the Three level," he said, "but all of us have lower S.R.'s than he had."

"The psychomeds are mulling meteors," Dugan grumbled. "That below Three idea is wrong. Some guys below Three are planet punchy, but others are O.K."

"The psychomeds," explained Thorn, "had to have a definite symptom of the so-called space psychosis. The only previous indication of mental instability was when the subjected tore into outer space. So, they formulated a new series of psychometric studies. Comparing the tests of all those that went beyond showed one thing in common. Very low space rating

quotients. The average fell below Three; hence, the figure Three as the danger line.

"Spaceways evidently doesn't accept that figure completely," Thorn continued. "I overheard two psychomeds discussing it the other day. According to them, below Three only showed a susceptibility to the psychosis; and was not, in itself, a symptom of the actual psychosis. They also claimed an ever increasing number of quotients were dropping below Three. Which made it impossible to Terra-tie personnel for merely having a high potential susceptibility. There just aren't enough space crews to continue Solar traffic if that were done. I'll bet that most of us here are below Three."

"We all are," Dugan nodded.

"Now, Dugan, you don't believe in the validity of the S.R. O.K., I don't either. How would you know whether a man was safe to be intrusted with a spacecraft?"

Dugan looked frightened. "Dyke, I wouldn't assign one to me. Or to Mill—or the skipper. That part about the S.R. only showing susceptibility smacked the comet right on the nose. We were all O.K. for quite a while after our quotient dropped. Then—*suddenly we were different.*"

Thorn poured more *moka*. This had become interesting. Very interesting indeed.

"*Different?* Different how, Lyle?"

Dugan shook his head. Jon Mill spoke slowly.

"What Duge is trying to say, Dyke, is that there was a *feeling. A different feeling.* It hasn't ever hit you, Dyke, or you wouldn't ask that. As for describing it—well, you just have to fall back on that old analogy of describing a color to the blind. It was a feeling of something *impending,* a kind of watchful *waiting.* And yet it isn't your own mind that is waiting—not analytically, anyway. It's a feeling that has nothing to do with self or entity. Something . . . oh, fission it, I can't explain a fundamental. Let's go see how the skipper is doing."

Dyke Thorn was thoughtful as the conveyer glided down to the control compartment. He hadn't learned anything definite. A *feeling* and a *waiting.* A waiting for what? He grinned suddenly. This trip, to say the least, promised to be quite unusual. From all indications it might even be out of this world!

Captain West looked up from the astrocomp as they entered.

"We're almost to zenith. Dugan, get the data from Thorn, make the corrections in the drive and cut it at max. Thorn, check the error at zenith-max. Mill, set the artigrav at point one as soon as Dugan cuts. I'm galley gliding. Hope you rhodium bricks left some hot *moka.*"

Zenith-max behind, the crew of the *Homing Pigeon* settled down to the routine of a planetary hop. And as the chronometer graphed the flow of time, Dyke Thorn *changed.*

The change was slight at first. The fact that he had changed at all was first brought to his attention by a chance remark of Bill West.

He and the captain were playing their usual game of dimensional

chess. Thorn, under his own name, was one of the great players of the system, and he had been pleasantly amazed to find that an obscure freighter captain was not only capable of giving him stiff competition, but was almost his equal.

West had just recouped his losses by a spectacular gambit. Thorn had entirely forgotten the game, and was staring at nothing, when West looked up from the pieces with a satisfied grin.

"Well, Dyke, what are you waiting for?"

Waiting! He had been waiting for something. But for what? He didn't know.

He looked at the pieces dazedly. "Looks like your game, Bill. I've had enough."

West looked at him with sudden understanding.

"What is it, Dyke? Has it got you?"

Thorn nodded.

"I know now what Lyle and Jon meant. Bigger than entity, and a potential demand—"

"Steady the jets, Dyke. It hasn't demanded anything yet, has it?"

"No-o-o, not even a suggestion. But the latent power is *there*. Bill, this *feeling* is the beginning of space madness."

"Look, Old Spacer, there's nothing to warp your continuum over. Jon, Lyle and I have made quite a few trips with that feeling, and no sudden demands have been made yet."

"Has it ever told you—"

"It's never told me to do anything. It's a natural part of you, so don't brood. If you ever go beyond, it will be because you *want* to go. No little green men will be driving you toward the stars."

Thorn laughed. He had got excited over nothing. He was studying a malady and he had become a victim. That rated him a spot in the history books.

Thorn had a troubled sleep. A natural part of you, Bill had said. An awakening instinct? - Aroused by what? And for what purpose?

He dreamed. It was a horrible dream; a dream in which he was an intelligent spider, a male of the black widow species. She was waiting, and he had to go to her. His reason said that it was self-destruction. The other part of him did not explain—it only demanded. He desperately analyzed the instinct by logic. It was a trap devised by nature for the preservation of the species. He argued that he did not want to preserve a species that was essentially evil; that the preservation of his own entity was more important to him. There was no counter logic from the feeling. It didn't argue or discuss—it was just *there*. He went.

"Should we inform the people?"

"There is no reason. It would only create chaos and uncertainty. Perhaps anarchy."

"An unprecedented number of storms have been observed, moving out from center."

"Spots have been associated with mass movements before. Maybe—"

The *Homing Pigeon* continued through time and space. Thorn, after his first fears had passed, settled into a comfortable routine.

They talked much of the awakened instinct probability. The others laughed when Thorn told of his dream. They all had had similar ones.

"I was a salmon," Dugan remembered. "It was time to go up stream, and by gosh, I didn't want to go."

"I was a homing pigeon," said Mill, "flyin' home. A mountain was in front of me that had no business being there. It hadn't been when I left, so logic told me to go another way. But old man instinct says, 'you jus' keep straight ahead, Chile'. And he was sho' nuff right."

West had been a Martian *kai gohr*. He was starving and a plate of food was in front of him. His sense of impending danger wouldn't allow him to eat it. What provoked him was that he never did find out whether the food was poisoned, or not.

Dreams laughed at, in the light of day, with good companions, did not look so serious. On one other account Thorn found them completely in accord. The feeling that the impending crisis was awaiting a missing factor.

And then the missing factor appeared.

They were all in the control room when they first heard it. So faint that it was almost a whisper, yet definitely audible. A signal—a distress signal. Out there a craft was sending a plea.

Mill handed the co-ordinates to West. West whistled.

"The signals are growing weaker, so we have to do it fast. And this is a mid-space reverse at max. Mill, take the controls. Dugan, ready on the jets. Dyke and I will plot the curve. I don't need to tell you to take it easy. Overblast with the deaccel or over-control and we're jelly against the bulkhead."

For an hour there was pandemonium in the control room. Time and time again, at the intermittent roar of the forward jets, they were hurled against the bulkhead. Spacecraft and the human frame were not designed for aerobatics at max. Normally there was ample time to make changes in course gradually as well as to de-accelerate on an approach. But the signals were growing weaker and they were fighting against time. The co-ordinates given by the directional might be many miles off the actual locality of the distressed craft.

It was a battered *Pigeon* and crew that completed the reverse. As they approached the signal they saw that it was a liner. West hung the *Pigeon* several miles astern, while Thorn plotted the course of the drifting liner. Mill, on the radio, informed them that he was unable to communicate with the craft. The mechanical distress signal was all.

Dugan was elected to go. They watched the bright streaks of his chemical jets, as the little tender approached the huge craft, vanish into the huge space lock.

They elected to ease the tension of waiting by inspecting the damage

done to the *Pigeon* by the violent turn. They found that the tons of metal had fought the twist miraculously. Only a few girders had started to spring under the terrific strain. West announced that three hours with the torches would have them more than spaceworthy.

The bright streak emerged from the liner's vault, and raced toward them. They heard their own space lock clang shut, and Dugan entered.

He was carrying a large space vault, which he set on the floor very gently.

"Radiation got their water supply," he said. "They only lived long enough to start the distress signal. Several thousand dead."

"Rotten break," West muttered. "All of them?"

Dugan smiled. "No not all—you see all of them didn't drink water."

He proudly opened the vault. Two little figures looked up at them from their tightly clutched milk.

"A little boy and a little girl," Mill whispered softly.

Something clicked. Not the missing factor. *The missing factors!*

They all got it at once. West looked at the liner with shining eyes.

"Food for several thousand. We could neutralize the water, space bury the dead, and . . ."

". . . not planetary astrogation," Thorn was meditating. *"but stellar!* Let's see, Circa VI—"

"Just like the dream," Mill thought. "Even as the salmon know when to move upstream—"

They silently completed the transfer to the liner and headed toward the stars.

. . .

The Supreme Omnipote faced the Council.

". . . and then the novae."

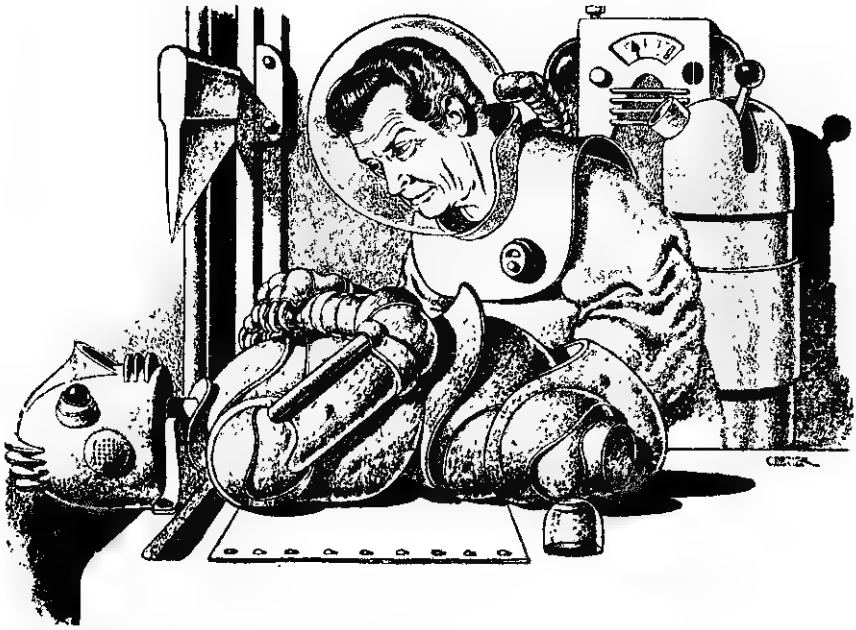
"So, Homo sapiens is doomed?"

"I did not say that! The system? Yes. Man? I doubt it. I doubt it very much. I have too much confidence in the efficiency of the eternal scheme of things, to believe that the highest product of an entire system would be utterly destroyed. Somehow—somewhere—provisions have been made."

And in Ancient Times it was said:

> Into this Universe, and Why not knowing,
> Nor Hither, nor Hence, Willy-Nilly flowing
> And Out of it, as Wind along the Waste,
> I know not Whither, Willy-Nilly blowing.
>
> Omar, Tent Maker of Naishapur

THE END



BURNING BRIGHT

BY JOHN S. BROWNING

A robot, if sufficiently intelligent, can start wondering about "whence" and "whither" too—even if he isn't supposed to, and produces some impressive results when he does!

Illustrated by Cartier

The voice whispered through the miles of underground tunnels and chambers of the big atomic power plant. "Calling Mr. Ferguson. Call the safety engineer. Come to the surface hospital at once. Urgent. Calling—" The whispering sound from the loudspeakers raised up little never-sleeping ghosts of doubt and fear in the men who heard it.

They looked up from their desks, then checked the wall counters to see if hidden radiation was leaking through the plant, they looked at each other in furtive side-long glances, then went quickly back to their tasks as if they were ashamed of the hidden fears the whispering voice brought to the surface. They were afraid but they didn't like to admit it. All men who had worked in an atomic energy plant had learned the meaning of fear, including Ferguson. All men. And maybe all robots.

Ferguson didn't hear the voice calling him to come to the hospital. He didn't know he was being paged. The loudspeaker in the room where he was had been removed, for repairs, and had not been replaced. The voice, if he had heard it, would have raised a cold sweat on him and would have taken him to the hospital on the run. When the hospital called the safety engineer, it meant only one thing, the grim and bitter and final fact of death, for someone.

But Ferguson didn't know he was being paged. And so, for the time at hand, he retained his peace of mind, or as much of his peace of mind as he, or anyone, with the possible exception of the robots, ever retained in an atomic power plant. There was something about a power plant that hated peace of mind in men. Watching the armor-covered, extremely careful technicians prepare to open the revolving door that led into the hell that was beyond, and remove from it the body of the robot that other robots had placed there in obedience to orders they almost certainly did not understand, he knew at least two of the reasons why there was no peace of mind in this place. One reason was the robots themselves. The other reason was the hell that existed beyond the wall, the hell that he was constantly aware of as a feeling of pressure and of tension, somewhere. No sound went with the feeling of pressure; the tremendous load of power being generated behind the wall was produced silently. Nor did the feeling of pressure reach his mind through sight or the sense of touch. But it reached his mind somehow, moving through some channel of communication not yet discovered by the neurologists, and he was eternally aware of it, like a dam just at the bursting point but never quite bursting.

Besides Ferguson, there were three men in the room. Two were technicians, whose duty it was to open the door to the power plant and remove and decapitate the robot in the revolving chamber, and the U.N. representative, whose duty was to make certain the robot brain —Smither's famous substance with a selective memory—went into the acid bath and was dissolved there. Robots capable of working in a hellish bath of radioactive radiations made the effective generation of electric power from atomic energy both cheap and practical, but for good and sufficient reasons, the U.N. was scared of them. When robots went into a power plant, to remain there until natural wear and tear had rendered them useless for further

service, a U.N. representative was on hand to check them in. And when they came out, worn and battered hulks of metal with only Smither's secret brain substance alive in them, another U.N. man made certain that the brain died. Otherwise men might find they had a dangerous and deadly rival fighting them for control of the planet.

There were no robots outside atomic power plants. The secret of Smither's famous brain substance was a U.N. secret. The manufacture of robots was a U.N. monopoly. The counting of robot noses was a U.N. job. It would remain this way until both experience and carefully controlled experiments had proved beyond the shadow of a doubt exactly what a robot was. It seemed best to take no chances with a mechanism that possessed not only sufficient intelligence to repair itself but could also perform highly complicated operations, or not until the human race had forgotten how to train armies and fight wars.

The U.N. wanted no robot armies in existence. Hence no robot knowledge of worlds outside of power plants, no robot knowledge of anything except the twin gods of duty and obey implanted so deeply in a brain substance that they could not be eliminated, men hoped!

"Ready!" the technician called. The U.N. man nodded. Ferguson nodded. The technician closed a switch and the heavy door began to turn.

The robot was an old model. Both legs were missing. The metal body sheathing was pitted and flaked. He lay quietly on the revolving turntable. As the door turned and the robot came completely into the room, the wall counters began to rattle like the tails of little snakes shouting a warning that something more deadly than any snake had come into this room. The robot body, bathed for years in the deadly radiations beyond the wall, was in itself a source of secondary radiations.

The technicians worked swiftly. A crane magnet lifted the robot from the turnable to a long bench. The robot made no attempt to escape although the photoelectric cells that were its eyes must have looked up at the knife above it and guessed the purpose of that knife. But, it crossed its arms and lay there looking up. The U.N. man nodded. The technicians closed another switch and the knife screamed down. The robot head dropped from the robot body and fell into a bath of acid. The crane lifted the body and dropped it into a lead-lined vault. The wall counters left off their savage chattering. Ferguson tried to repress a shudder and failed. He always hated this scene. The whole thing even to the knife, which was modeled on the guillotine, reminded him too strongly of an execution.

The robot had crossed its arms and died. Down in the acid bath the material with a selective memory, the brain, was dissolving into elemental parts. It had been alive, in a way, and now it was dying, now it was dead. It had accepted death calmly, but Ferguson, remembering the way the arms had been

crossed, stepped forward to ask a question.

"First time I ever saw one of them do that," the technician answered.

The U.N. man made a mark in his notebook. One robot, dead. "What difference does it make!" he asked.

"I don't know." Ferguson answered. He was irritated and a little afraid. What difference did it make if a robot crossed its arms before it died? He tried to think of that difference. He couldn't see the answer clearly. "They're not supposed to do that," he said.

The U.N. man shrugged. He was here to count dead robots, not to worry about them. He was in a hurry to get the job done and get out of this heavy armor and get away from this unhealthy place. "Next," he said.

The revolving door swung round again, hesitated while robots beyond the wall placed another worn-out body on the chamber that led to death, then came around again carrying its second load of twisted metal and resigned brain. The wall counters rattled their warning. The robot crossed its arms across its chest, clasping in them a little star-shaped object, the knife roared down. Ferguson beat the crane to the body. In the fingers was a little plastic star.

"Look at that!"

The technicians looked, the U.N. man looked. "Plastic molded into the shape of a star," one of the technicians said. "Funny, isn't it? It's hot, though. We'll have to dump it."

"They've invented death rites and death objects," Ferguson said. He turned to the U.N. man. "Look, I think this is important."

"What's important about it?"

"They've gained some conception of the meaning of death. They're beginning to attempt to control death. That's what death rites and death objects are, attempts to control the fate of the soul in some after-life—". His voice went into confused silence. These were unscientific terms that conveyed feeling but no real meaning. These were outlaw words that got their user a lifted eyebrow and a compassionate look.

They got Ferguson exactly that, plus a grin. The U.N. man glanced at the acid bath. "The death objects didn't do much good, did they? Next."

The grin did it. "Listen, you thick-headed " Ferguson caught himself. There was nothing to be gained by calling names. Besides, he knew enough psychiatry to know that his name-calling outburst was rising out of fears in his own deep soul, out of his own subconscious. "Sorry. But—"

"If you think it is important, I'll report it," the U.N. man said, compassionately. "Next."

Ferguson was silent. In his mind was turmoil. A robot going to death with a star in his hands! Ferguson had a touch of mysticism in him. The sight of a star-carrying robot touched deep wells of feeling in him, arousing age-old questions. *"Tiger, tiger, burning bright*

—" he found himself saying. *"In the forest of the night.*

"What the hand and what the eye,

"Shaped thy fearful symmetry?"

Was the tiger seeking the hand and the eye that had shaped his being?

The crane dropped the robot body in the lead-lined vault and the revolving door began to turn again. Ferguson had his eyes glued to the turntable when Blake, his assistant, burst into the room. "The hospital wants you!" Blake gasped, then, because he was not wearing armor, turned and ducked back out of the place.

"The hospital—" Tigers burning bright and robots going to death with plastic stars carried in crossed hands were erased from the mind of the safety engineer. He went out of the room without seeing what the turntable carried. Tigers burning bright and star-carrying robots belonged to the realm of teleological philosophy, to the doctrine of purposive and conscious causes, to the dim and dark nether region of first causes where science had not yet penetrated. For fifty centuries and more men had speculated on such subjects, without reaching any firm conclusions.

In the corridor Blake helped him tear off his armor. "Come on," Ferguson said. They started at a run. In the distance ahead of them voices roared. "Hup, two, three, four " And then roared again, "Hup, two, three, four," and were silent. In a changing world, one thing remained the same forever, the rhythm of the drillmaster's voice. Caesar's legions had marched to some variant of this sound, as had the men of world wars I, II, and III. It was the oldest sound on earth.

They met the source of the sound and stopped running, standing against the wall to let the file of robots pass. Ferguson counted them mechanically. Eight robots. They were in charge of a technician and they were on their way to the revolving door. A U.N. man marched behind them. For a moment Ferguson hesitated, watching the file march away. They walked, they swung their arms, like marching men. Each of them, he knew, had a set of perfectly conditioned responses to the problems that would be met inside the plant. Only, of course, that part of their minds was not functioning yet and would not start to function until they went through the revolving door. To a robot, that door was the borning place and the dying place. Ferguson wondered if they ever wondered about the world outside an atomic power plant. What were the limits of the selective memory substance that Smither had invented? Was it able to put two and two together and think of the time when it had not been and of the time when it would again cease to be?

Then the pressure of the urgency calling him to the hospital again erased all such thoughts from his mind. He turned, a tall gaunt man with a hungry look somewhere about him, and broke into a dogtrot down the tunnel. Behind him came his

silent shadow, Blake, younger but also tall and gaunt and also with the look about him of some secret soul hunger.

An elevator took them to the surface. They skirted the edge of the landing field with its parked helicopters. Before them, set among trees, was a cool white building—the hospital. As they went up the steps, rockets from a Moon-bound freighter throbbed in the far sky above them.

Inside the hospital a woman was screaming.

The screams came from a room down the corridor. The door was open. Ferguson looked in. The woman doing the screaming was floating up against the ceiling. She was wearing a white uniform and he decided she was a nurse. He could not decide why she was floating in the air and he preferred not to try. A man in the white garb of an intern floated beside her. The intern was swearing and making swimming motions with his hands and feet.

Dr. Clanahan, the chief resident physician, was standing on top of a stepladder and was reaching for the screaming nurse. An extremely fussed looking man in a white coat, whom Ferguson recognized as Dr. Morton, the staff psycho, was holding the stepladder. There was a hospital bed in the room, with a patient in it, propped up against pillows. The patient was a wizened little man, about fifty, with a skin so white and so clear it looked transparent, and a great shock of hair so silver white and shining that it made the spotless pillow covers seem dull and drab in comparison. The patient, looking up at the nurse and intern floating near the ceiling, was smiling happily, like a child with a new toy or like an old man with a new faith, Ferguson couldn't decide which.

The air seemed charged with static electricity. Ferguson thought he saw inch-long sparks leaping between Dr. Clanahan's outstretched hand and the hand of the screaming nurse. The ever-present wall counter was sputtering, *brrp, brrp, brrp-brrrp,* as if catching radioactive indigestion.

"Great day in the morning!" Ferguson said.

"What . . . what's holding them up?" Blake whispered, behind him.

"I'm guessing we're seeing an example of levitation."

"Lev . . . lev—" Blake couldn't say the word. "What . . . what are we going to do?"

Ferguson would have preferred to run but he didn't say so. He would have liked to turn around and walk out, in the calm manner of a man walking away from a ghost and pretending he doesn't see it, but he knew he couldn't. Every atom in him sensed the strangeness of this situation and radiated warning vibrations. He could hear those atoms ringing, like little silver bells tense with subtle warning. *Stay away, stay away,* the bells said. Ferguson felt a wave of cold run over him, like a spider with a thousand icy feet. *Stay away, stay away. This is not for men to see!*

Clanahan was suddenly aware of the presence of the safety engineer. "Help me," he wailed, grabbing for the nurse.

There was no mistaking the spark this time. It was six inches long, leaping between the nurse and the doctor. Ferguson moved forward as Clanahan at last got his hands on the nurse. There was a soft cracking sound as of something tearing. The nurse began to fall. Clanahan fell with her.

Ferguson caught them as they fell, nurse and doctor. He didn't know how much the nurse weighed when she was floating up against the ceiling but he knew how much she weighed when she hit him. He felt his knees sag under the unexpected weight. As he braced himself, Clanahan nose-dived across both of them and all three hit the floor. The nurse wailed, a thin sound deep in her throat that was like the whimper of a frightened child.

The room was silent. The patient chuckled, an out of place sound. Ferguson smelled ozone. The wall counter went *brrp, brrp* in slowing cadence. The nurse moaned. Dr. Morton straightened up the stepladder. Clanahan got slowly to his feet.

"Get me down from here!" the intern protested, from the ceiling. There was pain in the intern's voice and shocked surprise. His voice was the voice of a man whose universe has been turned upside down and who has lost all faith in the orderly nature of the world around him.

Hearing that voice, Ferguson knew that up near the ceiling a man was holding on to his sanity with a death grip. He sympathized with that intern.

Dr. Clanahan, moving with the purposive determination of a man who is going to do his duty no matter what happens, climbed up the stepladder again. The nurse crawled off Ferguson's lap and the engineer rose to his feet to catch the intern. Sparks leaped from Clanahan's fingers to the intern, an invisible fabric ripped and was torn, and Ferguson, ready this time, caught the intern and eased him to the floor. The intern sat down, then laid down, his fingernails scraping across the smooth plastic linoleum as he tried to dig himself a handhold on the floor. Clanahan came down the ladder cautious step after cautious step and looked at the in-

tern, then looked at the patient on the bed.

"Would somebody mind telling me what happened?" Ferguson said. There was a plaintive note in his voice. He did not wonder at it being there. Deep inside of him he was aware of a strong urge to get down and help that intern dig a hand-hold in the plastic floor, to use to hold on to the spinning world.

Dr. Clanahan took a cigarette out of the pocket of his white jacket. He was a young man but a worried man, now. A good doctor. He tapped the cigarette on his thumbnail, his motions slow and deliberate, and looked at the patient out of the corner of his eye. Then, the cigarette unlit, he went out into the hall. They heard him shouting out there. "Hicks. Judson. Miss Jones. Lock the doors. Don't let anybody in, or out, then come here. On the double." He came back into the room. There was a scurry of feet outside. Two men and a woman entered. Clanahan pointed the cigarette at the intern and the nurse. "Take care of them," he said. "Give them a sedative and put them to bed. Then come back in here and stay here. You, Hicks, you stay here now."

Clanahan's eyes sought Ferguson. "Come to my office," he said. "You too, Dr. Morton, if you please."

They followed him, Blake coming, too. He went ahead of them. They found him opening a filing cabinet and taking out a bottle of whisky. He drank straight from the bottle, then handed it to Dr. Morton. The psycho took it without a word. The whisky made little gurgling sounds as it went down his throat.

Ferguson had the feeling of unreality that goes with great events, the sensation that this is a puppet show with the actors on strings responding to the will of some unseen, far-off master. "Would somebody mind telling me what happened?" he repeated, and wondered if this question was in the script. "How did those people get up on the ceiling?"

"Why . . . why didn't they fall?" Blake asked.

"Uh," Dr. Clanahan said. He looked at Ferguson. "Where have you been? I've been trying to get you for an hour. No, don't bother answering. It isn't important. How did those people get up on the ceiling? The patient put them there."

"Huh?"

"He said, 'Rise thou up,'" Dr. Morton spoke. He took another drink. "And they rose up." He looked at the bottle, measuring its remaining contents.

"Sky hooks!" Ferguson heard himself say. "Tell me just a little more," he begged. He didn't care how he sounded. The need to know was a million volt tension inside of him.

"The patient was brought in this morning," Dr. Clanahan said. He looked at the bottle Dr. Morton had and decided there was no hope of getting it away from the psycho. Turning, he opened the filing cabinet and took out a second bottle, which he kept in his possession.

"He was brought in this morning with a load of radios."

"Oh," Ferguson said. He knew now why he had been called. It was his job to keep radioactive materials and radiations where they belonged. They didn't belong near any human being. "What department?" he asked quickly. "Where was he working and what is his name? How did he get the dose? Weren't the counters working? Hadn't he been warned—"

Clanahan shook his head. "He's not an employee, so far as I know. Anyhow he didn't have a badge on him."

"Oh. Outside the plant?" This was worse. When an employee got a load of radios, it was bad, but when somebody outside the plant caught a dose of death, there was likely to be a stir that would disturb half of Southern California. People were scared of these plants. That was one reason they were located underground, in out of the way places, to give the public at least the illusion of protection. "Where did he get it?"

"We don't know," Clanahan answered.

"And we're not likely to find out," Dr. Morton spoke. "He won't tell us his name or anything else."

"He's *got* to tell us! We have to know!"

Morton shrugged.

"You've got drugs that will force a man to talk."

"Uh-huh," the psycho nodded. "We were preparing to use one of them when . . . when—" He shrugged and took another drink.

"When he said, 'Rise thou up' to the intern and nurse," Clanahan said.

"Oh. He resisted?"

Morton laughed, a sound that was more giggle than laugh. "That he did."

"How did those people get up on the ceiling?" asked Blake.

"I wish you would shut up!" Ferguson spoke fiercely. "You keep bringing up the one fact that I've been trying to ignore." He glared at his assistant, then at Morton. "Well, how did they?"

"I told you," Morton said. "He told them to do it. A schizophrenic, paranoid type," he added, talking to himself.

"Nuts," Ferguson said. "We've got to know! Got to!"

"We'll try again," Morton said, his voice matter of fact. "You are not sticking to the subject, my friend," he added.

"I know it. I want to talk to him first."

"You may have that privilege," Morton said. He made a little gesture with his hands which indicated that Ferguson was welcome to it.

The nurse and the intern were gone from the room. Hicks and Judson, both male nurses, were in the room and not looking comfortable. The patient was still sitting up in bed.

Ferguson grinned and walked up to the side of the bed. "Hello," he said. "My name is Ferguson. I'm the safety engineer." He held out his hand. "What's your name?"

The patient took the outstretched

hand. "Glad to meet you, Mr. Ferguson. My name is God."

"I beg your pardon—"

The patient smiled at him. "You thought I was swearing, didn't you? I wasn't. God is my name."

"But—" Ferguson pulled back his hand and shut his mouth. Behind him, he could hear Clanahan or Morton or Blake breathing heavily. The male nurse on the other side of the bed looked as if he wished a male nurse could quietly faint.

"My name is God," the patient repeated.

In that moment, Ferguson had the dazed impression that the roof of the world had fallen in, that the sky had come tumbling down and a piece of it had landed on his head. Somewhere in the vault of heaven outside a rocket ship was blasting again. In this room, the far-off sound was a muted rumble but Ferguson, in that mad split second, had the soul-quickening feeling that he was hearing the rustle of angel wings, the roar of wind around mile-long pinions. And somehow or other the man on the bed seemed to grow in stature, to become an enthroned sky-high figure, with mile-long wings coming to answer his call. Then the moment passed. The sound in the sky became the sound of a rocket ship and nothing more, the figure on the bed came back to man size and was again a hospital patient.

Ferguson was shaken. *"Tiger, tiger—"* the words formed on his lips. He glanced around at the two doctors. Morton was looking out the window and Clanahan was wiping sweat from his upper lip. The pupils of Blake's eyes had shrunk to pin-point size.

The engineer took a deep breath. There was a way to handle this situation, if he could find it, he hoped. "All right, God," he said quietly, as if this was the most natural thing in the world. "You've picked up a charge of radioactive radiations. Mind telling me where you got them?"

The patient heard the question but he answered some other question that existed in his own mind. "Satan, all black but with shining eyes, came and knelt before me," he said. "He knew me. He acknowledged my authority. He said, 'Thou art God.'"

Morton looked interested. Ferguson wiped sweat from his upper lip. "Tell me what happened, old man," he urged.

"Satan—"

"Where did this happen?"

"Where—" The eyes were turned toward Ferguson. Involuntarily he drew back. He had seen the eyes of many men, had seen them in triumph, in happiness, and in sorrow; the eyes of the aggressive personality, the timid averted eyes of men who had no faith in themselves, but he had never seen eyes like these. The eyes of all sick men look alike, all of them reflect the knowledge that something has gone wrong inside the man.

The eyes of this patient were not the eyes of a sick man. He was carrying a load of radioactive burn, inside, but that fact didn't show in

his eyes. The only thing that showed there was—joy that passed the understanding.

This patient was happy! Death had marked his forehead with a red cross, labeling him as death's own, but he had no fear because of that. He radiated happiness. It looked out of his eyes.

"I went up the mountain," he said. "There I met—"

"What was the name of the mountain?"

". . Satan—"

"You're wasting your time," Dr. Morton spoke, behind Ferguson. "We'll try again."

Ferguson, shrugging, admitted he was willing. "I'll bet—" Blake said softly.

The patient watched the hypodermic being prepared. "No," he said.

"We're doing this to help you," Morton said gently. He was a competent psychiatrist and he knew how to handle patients, how to soothe their fears. Ferguson, watching, admired the man's ability and his courage but he could see the sweat on Morton's face and he knew how the psycho felt. Morton approached the patient. The patient stood up in bed.

"Rise thou up!" he said.

The air was suddenly charged with electric tension. The wall counter started *brrping*. And Morton went up. He floated up to the ceiling and stayed there.

The patient got off the bed. No one moved, no one tried to stop him. "I'll have to leave," he said.

He approached the door. It was locked. He rattled the knob. The door didn't open. "Out of my way," he said.

The door vanished. It went away, like smoke before the wind. The patient walked through the opening and into the hall.

From the window of Clanahan's office, they saw him walk across to the landing field, and get in a helicopter. They saw the vanes start turning, they saw the ship rise in the air, they saw it become a dot in the distance.

"Anyhow," Blake said, sighing, "he went in a ship. He didn't sprout wings and fly."

"Did you expect that?" Ferguson asked.

"I was betting on it," his assistant answered.

"I want you to locate a stolen helicopter," Ferguson said, into the telephone. He was talking to the police, from Clanahan's office, and while he talked, he watched Clanahan, Morton, and Blake drink whisky. Blake was a teetotaler, or he had been until this moment. He wasn't a teetotaler any longer. "It was taken from the landing field of Power Plant 71 less than ten minutes ago. When last seen it was flying due west."

"We'll get him," the police chief promised.

"I want you to understand, however, that the man who took it is not a thief. He is mentally unbalanced—" Ferguson fervently hoped he wasn't a liar.

"Huh? A nut?"

"And in addition, he is suffering

from the effects of radioactive poisons."

"Radios!" the phone yelled at him. "Has something gone wrong up there again? What are you trying to do, poison the whole population?"

"Find the 'copter and call me back," the engineer said, hanging up. Morton silently passed the bottle to him.

"How did it feel up there?" he asked.

"Not bad," Morton admitted. "Just kind of out of this world. That's all. Just kind of out of this world."

"What do you think happened?"

Morton shrugged. "The patient unquestionably has delusions of grandeur. He imagines he is God. If that isn't a delusion of grandeur, then I never saw one."

"Imagines?" Ferguson said.

"Shut up," Morton answered, without animosity. "He has delusions and he realizes that the use of pentathal will destroy his illusions. The illusions are very dear to him and he wishes to retain them at any cost. Hence he decided he had better leave this place because if he stayed here, we would take his illusion away from him." Morton shrugged as if to say it was a simple matter, if you understood it, and that there were no holes in his argument. His explanation covered the motivation of the patient and was probably sound that far but he and everyone else in the room knew there were holes in his argument, holes big enough to turn a rocket ship in.

"That door was matter." Clanahan said. "Glass and magnesium, that door was. Matter."

"So were the nurse and the intern," Ferguson said. "And so is Dr. Morton here. At least I've always considered flesh and blood to be matter."

"So they are," Clanahan said. He seemed to feel that this was one problem too much. The door, metal and glass, matter, was bad enough. Flesh and blood were too much. He looked around his office, his face fretful, but Morton had the bottle and didn't look as if he were willing to relinquish it. Clanahan went again to the file cabinet.

"Is that the pitcher that never runs dry?" Morton asked.

"There's one more," Clanahan answered, peering into the depths of the cabinet.

"Get it out."

"What do you think?" Ferguson repeated.

"I would prefer not to do any thinking," the psycho said, his voice unnecessarily firm.

"Do you want to close your mind?"

"Uh-huh. Very much. I want to keep my mind sane. In this profession, that's hard enough to do under the best of circumstances. To do it at all, you have to believe in an ordered universe on our level of observation at least. If I let my mind dwell on what I saw with my own eyes—" His gaze went up to the ceiling and clung there as if he was fascinated by the sight.

"Maybe he was God," Blake said, sighing.

A slow shudder passed over the

psycho's body. "What do you think I'm keeping out of mind?" Anger showed on his face. "Let me have my fantasy. I need it to protect my own sanity. Let me have it, I say. Where's that whisky?"

"On the desk in front of you," the engineer said. "What is your fantasy?"

Morton drank and looked up. "What I saw doesn't prove there is no stability in the . . . in the universe." He seemed to be talking to himself. "It just proves there is a supreme stability. "I've known that all along, unconsciously, but I couldn't find any explanation I was willing to accept on a rational level—"

Blake looked at his boss. "Man wrestling with the devil," he whispered. Ferguson nodded. "About your fantasy?" he prodded.

Morton glared at him. "How do we know how He comes and goes? He might be anybody, the man we pass on the street, the next patient who comes in to see me." His eyes dug into the engineer. "He might be you."

"I'm afraid," the engineer answered, "that I do not burn quite bright enough." Then, angry at himself because of the words he had used, he went on. "Your fantasy. Now you're the one who isn't sticking to the subject."

Morton drank slowly, took the bottle from his lips and looked fondly at it. "My fantasy is an explanation of how he was able to make people rise up to the ceiling, just by ordering them to do it, and

how he was able to make a door vanish, by telling it to get out of his way." He seemed to be in no hurry to continue.

"Go on," Ferguson urged.

"That patient had been subjected to intense radiation," the psycho said. "I think this radiation had changed the cell structure in his mind. Don't ask me *how* it was changed because I don't know. But I think this change unlocked some power latent in him, some wild talent we all possess to a mild degree, and as a result, material objects obeyed him. That's a comfortable, rational thing to think." Firmness sounded in his voice. "I'm going to think it." He tilted the bottle again.

"But—" Blake stirred, protesting.

"Don't try to tell me we know the limits of the powers of the mind!" the doctor snarled. "I know better. I've seen too many men who should have died get well because they believed they were going to recover, because they *wanted* to get well. I've seen too many men

die when there was nothing wrong with them, because they believed they were going to die."

Blake was silent. The psycho tapped his forehead. "There are more mysteries up here, Horatio—" He shook his head. "It is my fantasy to believe that we saw a wild talent in operation, a talent that had been released by a charge of radioactive radiations. I'm going to have my fantasy at all costs."

"Then you don't think he was God," Blake said.

"Not unless there is a chained god in all of us," the psycho answered. Far-off, again, rockets blasted in the sky. Ferguson shivered. "We've got to find him," he said.

"We don't," Morton denied. "Something is looking for him that will find him, no matter where he goes, within twenty-four hours. That I knew for sure." His voice trailed off.

"You mean he will be dead within that time?" the engineer asked. Morton nodded.

"I'll bet—" Blake began, tentatively, then was silent as his boss interrupted.

"He said he had met Satan "

"Illusion," Morton said firmly. "The distortion of an object into something else. He saw a bush or a tree or a rock and imagined it was Satan—"

Whaaang! went the telephone on the desk. Clanahan grabbed it, listened, then handed it to the engineer. "For you. It's the general manager—"

"Ferguson," the voice grated in the engineer's ears. "I've just had a call from the health department. They've got a case of radio sickness on their hands. Get on this right now."

"Where is the patient?"

"Dead. He belonged to some kind of a cult that has its headquarters on Red Mountain. Presumably he got the radios there. You can get the dope from them."

"I'll get on it." He hung up the phone. "Another case," he said.

Whaang! went the phone again. Ferguson picked it up automatically. He listened quietly, then hung up. "The police," he said to the men in the office. "They've found the stolen 'copter, near Red Mountain. It was smashed in landing."

"What . . . what about the pilot?" Blake whispered.

"He's missing," Ferguson answered.

At dusk, they hadn't found the pilot. But they had learned his name. Homer. He was the leader of a group of twenty-one people who had founded a tiny colony, on the slope of Red Mountain, within two miles of the power plant, a colony that was actually a cult devoted to the simple life. Seeing this group, Ferguson wondered if the spirit of Rousseau was still alive. Rousseau had advocated the simple life back in the Eighteenth Century. Here in the Twenty-first Century men were still following his ideas. Here, on a spring-watered plot of ground, men and women raised vegetables and fruits and grain. Up near the top of the mountain they had a herd

of sheep, carding and spinning and weaving their own wool, making their own clothes.

Here, on this mountain, within fifty miles of the tremendous technology of Southern California, within fifty miles of millions of people who existed in a world of plastics and synthetics and unlimited energy, were people who had never seen a synthetic fabric, who had never tasted artificial vitamins or eaten food grown in hydroponic tanks. Homer's Bunch, they called themselves. Homer was their leader. He had no second name, and needed none. They described him to Ferguson, Clanahan, Morton, and Blake listening. "Hair whiter'n silver, kind of skinny—" Yes, it was the same man.

Blake stirred uneasily at the identification, the lines of gaunt hunger showing on his youthful face. Up until now he had harbored the hope— But no matter.

Homer's Bunch wanted to know what had happened to Homer. Ferguson told them, as gently as he could, part of the story. They watched him as he spoke. "Does that mean he is going to die?" Bill asked. Bill was at least seventy but arrow-straight.

"Yes," the engineer said. He expected the news to sadden them, he thought the women would start wailing. But they weren't saddened. And no woman cried. "Part of Homer will die," Bill said, "but part of him will live on." They nodded in agreement and smiled as though they shared some tremendous secret with each other.

"When did you see him last?" Ferguson asked.

"Last night I saw him," Bill answered. "Jist at sundown. A goin' up the mountain, he was, to pray."

"He went *up* the mountain," Blake said, to himself.

"That's where we're going too," the engineer said. Bill showed them the path and offered to go with them but they could see he didn't really want to go and they didn't urge him. Blake's portable counter *brrped* under the impact of a stray cosmic ray as they started up the path Homer's Bunch had made.

"Do we really need that thing?" Morton said.

"Yes," Ferguson answered.

"It fidgets me."

"It would fidget me a lot more if I didn't have it," the engineer said.

Darkness came down. Chittering bats flew around them. A lumbering beetle, bound on some mysterious errand of its own, hit Ferguson in the face. Cold sweat popped out all over him. He went doggedly on.

They reached the top of the middle ridge, found there a cleared space. Above them blazed a million stars. A wind moved through the darkness, bringing with it a touch of chill. "The wind goes up and looks at the sky and then it runs back down and huddles against the earth, for protection," Blake said.

"Homer!" Ferguson shouted. The night was still. On the far horizon, lights flashed in the air as a rocket ship glided down to haven. It was so far away the sound of the jets

was lost. *Brrp, brrp,* went the counter.

"If we didn't have to find that man" Morton said, "and learn what happened—how he got the charge of radios, I mean—I'd say we'd better get from here. How did he get to the hospital in the first place, Clanahan?"

"Some motorist picked him up somewhere and brought him in and dumped him on our doorstep," the doctor answered. "The motorist didn't stick around to tell us where he had found him."

The psycho cursed all motorists with vicious oaths. "*Homer!*" Ferguson yelled and waited for an answer he didn't get. *Brrp, brrp, brrp,* went the counter.

On the slope leading up to the next ridge above them a single gravel rolled. Ferguson felt Blake's grip on his arm.

"It just occurred to me," Morton said, "that Homer got his dose somewhere around here."

Brrrrp, the counter echoed.

Ferguson looked around. "If you want to run, now is the time."

"What?"

The night was silent. Another gravel rolled. And a voice said, questioningly: "*Master?*"

"God!" Ferguson whispered. Homer's words came back to him. "And Satan, all black but with shining eyes, came and knelt before me."

On the slope above them, hidden among shrubbery, two dimly shining eyes looked out.

Ferguson was cold, cold, cold. A wind that blew off miles of glacial ice was blowing over him. Air that had gone up to the top of the world to look at the sky and had been frightened by what it had seen there and had run back to the earth for protection, bringing the cold of outer space with it, that wind was touching him.

From the slope the voice came again, saying: "I want to speak with my master."

Gravel crunched as a dark figure moved. *Brrrrrrrp,* went the tails of the little warning snakes.

"Satan!" another voice screamed. "Black deceiver! Thou tricked me to my death!"

"Homer!" the engineer screamed.

A gun boomed. "I knew you'd come back!" Homer's voice screamed. "You'll not trick me again. This time I'm ready for you!" The gun roared again.

"Master, no!" the first voice begged.

Gunshot followed gunshot. There was a hollow, booming sound, as of bullets striking their target in a shooting gallery. "No, master, no," the first voice pleaded. Footsteps sounded as something approached.

Brrrrrrrrr, went the counter. Blake started forward. Ferguson grabbed him, jerked him back. "You fool! There's death out there."

"But I want to see."

"It will come to us. We don't have to go to it."

Boom, went the gun, for the last time. "If bullets won't kill you, what will?" Homer's voice came, wonderingly.

From the clearing, they saw Homer run forward, his silver hair shining in the starlight. And they saw him fall. They saw him try to get to his feet and fall again. He didn't get up this time. The thing that had been looking for part of him had found the part it wanted here on this windswept ridge.

They saw a dark body come out of the bushes and move toward Homer and kneel beside him. "Master," a voice whispered, "do not go away."

The voice had a metallic tinge but there was pain in it and sorrow and hurt past the understanding of hurt. It was a voice coming out of loneliness and crying out that it was not right or fair to be alone. It had thought it had found someone to lessen its loneliness, a friend, perhaps a god, who might explain why it should have to be alone among mysteries that passed the understanding. But the friend it thought it had found, the god, this god had gone away. And the voice could not understand.

"Master. Do not go away."

Ferguson heard the scream start in Blake's throat and he reached out to choke off the sound, too late. Out there in the cleared area something had heard the sound and was getting to its feet and looking around.

"Master?" the voice came again, with new eagerness. Perhaps, after all, there were other gods!

It started toward them.

"Stay away!" Ferguson screamed.

"Master, master!" Heavy footsteps sounded. *Brrrrrrrrrp* went the counter.

"Stop!"

"Master?"

"Stop, I say!"

The pounding footsteps went into silence. "Master, I wish to speak with you. Master, I wish to know—"

"You stay away from us!" Ferguson said. "You stay way from us until you've cooled off. You're charged with death itself—"

"Death? The star place? The turning door—"

"A robot!" Blake whispered.

"Yes," the engineer answered. He turned again to the dark figure standing in the clearing. "How did you get out of the plant? How did it happen you weren't missed? How—"

"We held back a brain case," the answer came. "We made a body from spare parts. We followed a tunnel."

"That was actually a ventilator. What do you want?"

"Want?" the question came. "We want to know. There are walls around us. We want to know what is beyond the walls. We want to know what is beyond the turning door that is the borning and the dying place. We want . . . we want to meet our master, our creator," the voice said.

"God!" Ferguson whispered.

"That's it," the eager answer came. "That's the word. Are you our god, are you our creator? We want—"

Standing on a mountain top with

stars bright in the sky overhead, with a rocket ship coughing somewhere in the night. Ferguson tried to think of an answer to this question. In his mind was the thought of tigers burning bright in the forest of the night. "I'm not," he said slowly. "A man named Smither—No, that isn't the whole story. In a way, I guess, you could call us gods."

"Then we have reached our goal," the robot said.

"You have climbed one mountain," Ferguson said.

"There are other mountains?"

"We'll climb them together," the engineer said, sighing. He could feel exultation swelling in him.

"Then this was where Homer got his dose of radios?" Morton spoke behind him. "He came up here to pray and met a kneeling robot. The robot told him he was God and he believed—"

"That's part of it," Ferguson said.

"A small part," Blake spoke. "I'm still betting."

Ferguson sighed. "It's a good bet," he said.

They went down the mountain eventually, four shaken men, walking on a gravel slope. But it seemed to Ferguson that while their feet were on the gravel slope, their heads were high enough to reach the stars. Behind them, keeping a safe distance, walked an alien creature of their own creation, a robot, a helper in the long search, Ferguson thought. Men could use a helper in the long search that seemed to have no ending. Exultation swelled in him. Behind them, the heavy feet of the robot clumped along. He, too, walked like a creature whose head was tall enough to reach the stars.

THE END.

THE ANALYTICAL LABORATORY

The second part of Jack Williamson's ". . . And Searching Mind" shows a point score of 1.13. The remarkable thing about that is that the point score for Part I was—1.13! The voting was consistant, to say the least—and in the face of some mighty strong competition, as it had in the April issue, it indicates the story was very well liked. The scores were:

Place	Story	Author	Points
1.	. . . And Searching Mind	Jack Williamson	1.13
2.	Ex Machina	Lewis Padgett	2.72
3.	He Walked Around the Horses	H. Beam Piper	2.85
4.	The House Dutiful	William Tenn	3.47
5.	New Wings	A. Bertram Chandler	4.04

I thought that whole issue was a strong one; looks like you agreed!

THE EDITOR.

THE OTHER END OF THE TRAJECTORY

BY WILLY LEY

***A lot** of Allied men were acutely aware of the arrival of the V-2s—this is a study of what went on at the other end, where they took off. The V-2s had a number of cousins, small brothers, and nephews, too—*

When, about a year ago, I talked to the Director of the Institute of the Aeronautical Sciences and mentioned in passing that I was getting ready for a trip to White Sands to witness the firing of a V-2 rocket, he smiled and said: "Yes, I would like to see a V-2 go up myself." I said something to the effect that a man in his position should not have much trouble in being admitted to the White Sands Proving Ground for a firing. He readily agreed: "It's mostly a question of being too busy; but I sure would like to see a V-2 take off." The emphasis was somewhat strange and my face must have shown it, because he added: "You see, during the war I was where a few hundred of them came down."

It is only natural that he was curious about the other end of the trajectory and it is also natural that that curiosity is not restricted to those people who were "where a few hundred of them came down." While a lot has been written about V-2 during the last few years and while most everything about the rocket itself is now available to anybody interested by way of declassified documents, there is still relatively little known about what happened at the other end of the trajectory.

It is an all-around difficult problem of contemporary history.

The weapon was developed under very strict—German—military secrecy. It was in the nature of the thing that a large number of people had to know about it—the story is probably quite similar to that of the atom bomb on this side of the Atlantic Ocean—but presumably very few of them knew more than small and disconnected parts of the whole picture. Then the development center at Peenemünde was leveled by one of the typical "trucking raids" of the R.A.F. What was

left was touched up by some Flying Fortress pin pointing. And what was left after that promptly disappeared behind the well-known Iron Curtain in April 1945, when the Russians moved in on the important Baltic seaport of Swinemünde, swallowing up a string of seashore resorts and Peenemünde at the same time.

Every German in that area must have seen what was coming, but only a number of key men were able to act upon that forgone conclusion and to move out—fast—in the general direction of Bavaria where the United States Army provided a quite firm welcome. Of course these men were interrogated extensively, but the reports of those interrogations are still classified.

The situation greatly resembled the normal state of affairs in the tropical fish business. When a new variety arrives from the Amazon or Orinoco nobody knows what those fish eat, what diseases they are apt to catch, what to do about the infections once the fish got them, how the fish reproduce and when they mate. All this is so-to-speak a secret. Then a fancier or dealer spends time and money to find out—and then it is a Secret.

However, military secrets don't stay that way indefinitely. Like pregnancies, they become obvious after a while and the need for secrecy dwindles automatically as time goes by. Quite a number of interesting facts have been made known during recent months and it is now possible to add a considerable amount of detail in the story of the first big rocket which has convinced even the most stubborn that rocket research is not merely a mathematical game.

Still looking at the picture from this end of the trajectory some statistics about the V-2 bombardment of England have been released. The total number of V-2s which crashed down on English soil was 1,050. The first of them fell on Chiswick, London, in the early evening hours of September 8, 1944. The last of the 1,050 fell on Orpington, Kent, at 4:54 P.M. on March 27, 1945. The rockets produced 9,277 major casualties, 2,754 killed and 6,523 wounded.

The next released report already places us behind the scenes on the other side. As is now generally known, the Germans called the V-2 rocket "A-4", standing for Aggregate No. 4. Obviously there must have been preliminary models labeled A-1, A-2 and A-3. But then it was also stated that the Germans were working on a big two-step rocket, with a modified A-4, called A-9 as the upper step, and a lower step of eighty-five tons take-off weight, called A-10. Everybody who read the designations A-4 and A-9 quite naturally asked what was A-5, and A-6 and so on up to A-8? The answer to that question is provided in a small manual called "A Summary of German Guided Missiles'" by Norman Harlan and Gene McConnell, released as document PB 27795.

A-1, the first of this series, was built quite early; the "Summary" says in 1929 which figure is cer-

tainly wrong. 1931 is more likely. It weighed 150 kilograms—330 pounds—and never took off, presumably it was used as a teststand on the ground.

A-2 was very similar to A-1 and presumably of the same size. "It was successfully launched in 1934 vertically to a height of 6,000 feet."

A-3 looked very much like a V-2, but was only 25 feet long with a largest diameter of about 2½ feet. Too small to carry a heavy payload it was used for research work on rockets. A-3 featured the internal control vanes operating in the exhaust stream and had an early version of the automatic control system. It weighed 1,650 pounds.

A-4 became "V-2" when put into mass production.

A-4b was an A-4 rocket with small wings to increase the operational range. The wings converted the *empty* rocket into a high-speed glider, it was expected that the range would be increased by a full one hundred miles by this device. This would have made it possible to fire at cities almost three hundred miles distant. Not used operationally.

A-5. "The A-5 was intended primarily for research in control mechanisms. It was 16.4 feet long with a 2.0 foot diameter and powered by a hydrogen peroxide/potassium permanganate motor. When launched vertically, the ceiling was 39,400 feet and the missile was recovered by parachute for re-use." This paragraph, quoted in toto from the "Summary," contains the interesting information that H_2O_2 was actually used as a rocket fuel by itself. Hydrogen peroxide, in the presence of chemicals like potassium permanganate or sodium permanganate, breaks down into H_2O and O_2 with the water appearing in the form of vapor or steam. In the A-4 rocket this reaction had been used to power the steam turbine which drove the fuel pumps. In the A-5 rocket it was used for propulsions.

A-6. The "Summary" states laconically: "This was designed to reach supersonic speed but was never constructed." The rocket motor of the A-6 was to run on nitric acid and a hydrocarbon mixture.

A-7. "This missile resembled an A-5 with small wings. It was launched horizontally from an airplane to obtain experimental data on gliding."

A-8. "This was a design study that would have been similar to the A-9 but used a liquid oxygen—alcohol motor".

A-9. "A few A-9s were built but it is believed that none were ever test fired. Although requiring different internal construction to provide for seventy-five square feet of wing area, it was similar in appearance to A-4b. Using a fairly flat trajectory before the glide and subsequent vertical dive into the target, the A-9 was to cover its total range of 370 miles in 17 minutes."

Apparently the development of A-9 did not come along as had been hoped, because A-4b was planned as a substitute for A-9 until the latter.

was ready. Why A-9 was planned for other fuels than alcohol and liquid oxygen is somewhat mysterious, the designers may have anticipated difficulties in fueling the A-9 when assembled to its lower step A-10.

A-10 was to develop a thrust of 200 tons for 50 seconds, attaining a velocity of 4,000 feet per second at the end of this interval of time, while carrying an A-9. It was hoped that A-10 could be recovered by parachute and re-used. The A-9 rocket of the A-9 plus A-10 assembly was expected to end up with a velocity of 8,200 feet per second, producing a total range, including the final glide, of somewhat more than 3,000 miles.

Another look behind the scenes at Peenemünde is afforded by a United States Navy report by Lowell Lawrence, released under the designation PB 23742. This report tells about the rocket *Taifun* —pronounced the same way and meaning the same as "typhoon"—which was a very interesting attempt to adapt a comparatively small liquid fuel rocket to mass-production and mass use as an anti-aircraft barrage rocket.

Taifun had a diameter of 3.9" measured through its body, and 8.6" measured across the fins. Its total length was 75.6" and its empty weight 42.63 pounds. The fuel tank held 5.73 pounds of *Visol*—Code name for vinyl ether—while the tank for the oxidizer could hold 15.9 pounds of *Salbei*. *Salbei* is actually the German name of a kitchen herb, but the German name for nitric acid—which is what it was—is *Salpetersäure*, using the one as a code name for the other was similar to the habit of the VfR engineers to call the oxygen—*Sauerstoff*—Sauerkraut.

Taifun was full of interesting features and perhaps the most interesting thing about it is that every one of these features had been thought up and even tried by somebody else before. Essentially the body of the rocket was a fifty-inch length of four-inch OD seamless tubing. This was the fuel tank. The tank for the oxidizer was a length of smaller tubing, inserted into the bigger one. The tanks were coaxial and the trick of having them that way led to a noticeable saving of weight. When pressure was put on the liquids for forcing them into the combustion chamber, the inner tank was subjected to the same pressure inside and out, it could be rather thin-walled for this reason.

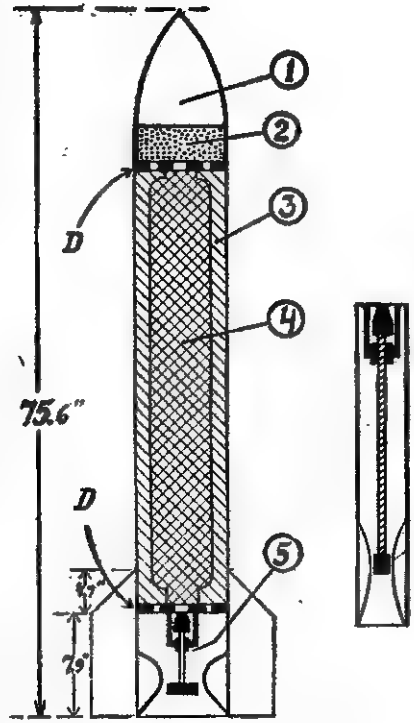
One of the early models of the American Rocket Society was designed that way. I don't know whether the designer or designers had weight-saving in mind or whether they were just after a compact design. At any event, it had been done before.

Counting from the top down the arrangement of the component parts of *Taifun* was rather conventional. First the warhead, then the pressure generator, then the coaxial tanks and finally the rocket motor. But the pressure generator was not a compressed inert gas, it was a

small cordite charge which generated the gas while burning. This feature had once been suggested by a visiting engineer during the early days of the German Rocket Society. It had been used, but not for generating pressure in the fuel tanks, but for ejecting the parachute. It may be added that *Taifun*, during ground tests, was run on nitrogen gas from a pressure bottle.

Taifun was, to all intents and purposes, a valveless rocket. When the cordite charge burned, generating a pressure of some 700 pounds per square inch, that pressure was "confined" by so-called rupture disks, metal disks holding thin metal membranes which broke under a pressure of 40-70 pounds per square inch. Once the membranes broke, the pressure was on the liquids and transmitted through them onto another such rupture disk which formed the bottom of the tanks. The membranes there broke too and the fuel flowed into the combustion chamber. The acid oxidizer was still held back by a plug which had a long stem with a second plug in the bottom which sat in the narrowest part of the exhaust nozzle. The fuel flow pulled them stem down, then the oxidizer could come in and combustion could start.

The rupture disks had been used by the German Rocket Society in its large models, the so-called Magdeburg Rocket had them. The declassified reports are silent about what happened to the bottom plug and stem of the *Salbei* valve. Presumably the stem burned through



ANTI AIRCRAFT BARRAGE ROCKET "TAIFUN."

1. *Warhead*
2. *Cordite charge for pressurization*
3. *Fuel tank*
4. *Nitric Acid tank*
5. *Nitric Acid valve*

DD indicates the rupture disks.

Insert at right: Combustion chamber drawn to scale.

very quickly and the lower portion of the stem plus plug were thrown out through the nozzle. If this was the case, the method was copied from the "plug valve" of the first *Mirak*, the first functioning model of the German Rocket Society.

Since *Taifun* was meant to be an antiaircraft barrage rocket, its performance was calculated to resemble that of an antiaircraft shell. At full flow fuel and oxidizer were used up at the rate of 9.6 pounds per second. Since the total amount available was 21.6 pounds this would have accounted for a burning time of only 2.2 seconds, a burning time which compares with that of the larger sizes of United States dry fuel bombardment rockets. Of course full flow could not be established immediately, so that the supply lasted for almost three seconds. This high rate of fuel consumption led to accelerations which are customary with dry fuel rockets.

Taifun took off with an acceleration of 31 g which increased to 45 g. The altitude reached was around 50,000 feet. The weapon was clearly still in the experimental stage when the Allies put an end to the research going on at Peenemünde. It was an interesting attempt to create a liquid fuel rocket with all the characteristics including ease of mass production and simplicity of component parts—of military dry fuel rockets.

Another little detail in this piece of recent history was filled in early in May, 1947, when the Russian occupation forces let American correspondents wander around on the ruins of Peenemünde. There is nothing left now, New York *Times* correspondent Jack Raymond wrote, but "a few samples of colossal wreckage."

"It is difficult to believe," he continued, "in view of the smashed concrete structures, the blasted-in tunnels, the rusted and twisted rail tracks and the weed-covered litter of the former steel platforms, that even a part of the base has been used for postwar testing of any rocket devices that may have remained . . ."

The Russian officer who is in charge of the base, Major Anatole Vassilov, is the same officer who led the infantry attack that captured Peenemünde in 1945. He declared that it was seventy-five per cent wreckage then and that the few survivors he captured credited both the R.A.F. and the American Air Force with the ruin. Major Vassilov stated that his assignment was simply to wreck the remaining twenty-five per cent and that that job was done.

The area is now covered with large water filled holes. The wild ducks which used to be frequent on the island of Usedom on which Peenemünde is situated, may find them to their liking.

But the other end of the trajectory was never actually in Peenemünde; as far as Englishmen and American troops in England were concerned it was in Holland. Specifically it was The Hague—which the Dutch call *Gravenhage*—

and the nearby Wassenaar. It was Hellendoorn in the province of Overijssel. It was Gaasterland on Lake Ijssel—as the remains of the Zuider Zee are now called—and a few other places along the Dutch coast.

Up to now we could only guess what had happened in Holland, but now we know. Two Dutch scientists, Dr. J. M. J. Kooy of the Aeronautical School at The Hague, and Professor Dr. J. W. H. Uytenbogaart, professor of mechanical technology at the Technical University at Delft have told much of it in great detail in a new book.

It is a rather weighty volume, 472 pages with lots of maps et cetera weighing precisely three pounds. Its title is "Ballistics of the Future" and it is conveniently written in English, as scientific works of Dutch origin often are. It was published by the Technical Publishing Company H. Stam at Haarlem, Holland. If its price seems high, thirty Dutch guilders or twelve United States dollars, it can only be said that it is worth the money it costs. Most of the way through it is not an easy book to read, the very first chapter is entitled Vector Calculus. But it contains a wealth of material which may be classified in three sections.

One is mathematical, having to do with the calculation of long-range trajectories—including interplanetary—the other sections are descriptions of V-1 and V-2. And no matter how much you may expect from the term "description"; it is there. There are very precise—and beautifully drawn—diagrams of all the major components of V-1 and V-2 and of many of the minor components. There are careful descriptions of the various instruments which formed part of the equipment of the rocket, the authors had the original components on hand and went over them with rule and micrometer. There is the theory behind those instruments. There are complete wiring diagrams. And there is the story of how the V-2s were fired from Holland, mostly from The Hague.

On Thursday, September 7, 1944 there arrived at The Hague a German *Sonderkommando* — special squad or group— under the command of a captain who, as Professor Uytenbogaart describes it, was virtually autonomous and who received his instructions directly from Supreme Headquarters in Berlin. Apparently the groups which fired the long range weapons had nothing at all to do with armies or divisions or regional commands, but were directly attached to the very highest level of military authority.

"This *'Sonderkommando',*" — I am now quoting from the book - "immediately began with the temporary vacation of the houses at the end of the Konijnenlaan, the Kockockslaan and the Lijsterlaan —streets in The Hague. The occupants were notified that they had to vacate their houses within two hours and to leave everything behind: windows and glass doors had to be opened. Some India rubber cables were laid from the Rijksstraatweg

via the Rust en Vreugdlaan, which established the connection with the normal electric network—voltage 380 volts/50 cycles.

"The next day, on Friday September 8th a column arrived consisting of six cars.

"At about 6:45 p.m. Middle European summer time the first two giant rockets were launched at the same time from two road crossings. Immediately after this the installations were removed.*

"The next day the entire evacuation of the whole of Nieuw-Wassenaar was commanded and had to be completed by Wednesday afternoon, September 13, 1944 at 5:00 p.m. Meanwhile the launching installations were moved to the park attached to the residence "de Beukenhorst", where the first few rockets were launched on Sunday afternoon.

"After the completion of the entire evacuation on Wednesday September 13th rockets were also launched from two roadcrossings. On Sunday September 17th the launching crews left for Overveen, near Haarlem. A week later the inhabitants of Wassenaar were allowed to return.

"During this whole first period the weather was sunny, dry and warm. It is noteworthy that during this time there were no failures."

Dr. Kooy or Professor Uytenbogaart assume that this sudden departure might have had something to do with the landing of Allied air-borne troops near Nijmegen and Arnhem. But it was not yet the end of the story, in fact worse things were to come.

"On Tuesday, October 3rd the *Sonderkommando* returned and started launching rockets again from "de Beukenhorst". This went on till Friday, October 27th. During the period from October 4th to 27th only two rockets were failures; these exploded at a very great height.

"On Friday October 27th at 2:00 p.m. the first major failure took place. A rocket launched from site No. 3—"de Beukenhorst"—rose to a height of about three hundred feet and then fell back on the site, which was destroyed. Twelve of the crew were killed.

"After this the site was abandoned and the launching was interrupted for about a week. The damage done to buildings in the neighborhood was limited to roofs and windowpanes. The latter were even broken at a distance of about two thousand feet from the center of the explosion. Immediately after the failure the Germans spread the rumor that the warhead of this rocket had not exploded, but that the oxygen and ethyl alcohol, alone had caused the damage. This was not true, the charge had also exploded. November 4th the launching was continued, but now from the estate "Langenhorst". Meanwhile a car park and repair shop

* One of these two rockets must have been the one which crashed on Chiswick; I have not been able to find out anything about a second rocket falling simultaneously elsewhere. It seems logical, therefore, to assume that one of the two rockets exploded at great height and at a considerable distance from both take-off site and target.—W. L.

had been installed on the dairy farm "Rust en Vreugd." The giant rockets were set and loaded with explosive in the park . . . they were brought there during the night on very long lorries which fetched the rockets at the Leyden railroad station."

The city suffered considerable damage through these firings, and it was not so much from Allied counter-measures, although the authors state in the preface that "these made life even more unbearable."

But much damage was caused even when there were almost no Allied counter measures, as for example during the months of November and December 1944 and January 1945:

"During these months the weather was very bad: it was very cloudy all the time, so that there were no bombardments by the R.A.F. During these months the greatest number of failures took place, amounting to twenty per cent on the average. The maximum number of failures during one night amounted to five, one after the other."

It can be seen now that the statements printed in British papers on such occasions that "no rockets fell during the preceding night" did not always mean that no rockets had been fired. In fact it is possible that the Germans abandoned one launching site because there were too many ammunition dumps in its vicinity. The last three rockets fired from The Hague were fired on March 27, 1941 at 3:01 p.m., 4:02 p.m. and 7:18 p.m. local time. Again the last of these three has not been reported from England and must have exploded in the stratosphere, possibly due to leaks in both tanks, forming an explosive mixture in the spaces between the tanks and between the tanks and the outer skin.

The total number of rockets launched from The Hague and suburbs has been tabulated by Drs. Kooy and Uytenbogaart as follows:

MONTH		TOTAL NUMBER	FAILURES
September	1944	24	0
October	1944	81	4
November	1944	142	12
December	1944	132	17
January	1945	229	15
February	1945	207	12
March	1945	212	19
		1027	79 = 7.7%

The column "failures" contains only those which took place at take-off or soon after, there must have been many more because the two authors state that "about six hundred of these rockets arrived in London."

The failures which were observed by the inhabitants of The Hague were of various types. Occasionally a rocket would explode upon ignition, others would rise into the air for about their own length and then explode. There is a photograph of a former launching site in the book. It shows an empty space between some trees, the type of location preferred by the Germans. They liked to have trees or

buildings near the V-2 launching sites to act as a windbreak for the ticklish first few seconds when the rocket is slow and not too stable. The trees are neatly decapitated at a height of about thirty feet.

Mostly the rockets crashed one thousand to two thousand feet from their launching sites, usually along the line of the path to London. One failure which occurred on March 23, 1945, must have been quite spectacular. The rocket was launched at 9:00 a.m. and "described very complex circular and spiral curves above The Hague, before coming down in Duinstraat, causing many casualties there."

Another highly interesting although to visual observation not at all spectacular failure occurred when the automatic pilot, instead of malfunctioning, as in the preceding case, failed to function at all. The trajectory of a V-2 rocket used as long range artillery was, of course, very similar to the trajectory of the shell of a long range gun. The main difference could be found at take-off, since the rocket could not be pointed in the direction of the target like a gun barrel, but had to depart vertically. As it gained speed it was then eased into the proper angle for maximum range. According to W. G. A. Perring, F. R. Ae. S. the rocket was to be turned as follows:

TIME from take-off (elapsed time)	ANGLE
0.0 seconds	90°
2.0 "	90°
8.5 "	80°
11.5 "	76°
28.5 "	60°
47.0 "	46°
52.0 "	44°

At the White Sands Proving Ground, where the aim is not range, but altitude, the instrument is set to turn the rocket by only eight or ten degrees, so that its longitudinal axis forms an angle of either eighty or eighty-two degrees with the horizontal.

One of the V-2s fired from Wassenaar *stayed on the initial vertical path.* The Germans determined that it reached an altitude of 162 kilometers which is almost precisely 100 ½ miles. Professor Uytenbogaart, who witnessed this unintentional shot into the ionosphere, unfortunately fails to tell what the horizontal range turned out to be. It may have been as little as a few hundred feet.

All of which makes it abundantly clear that the rocket A-4 was by no means ready for operational use when it was put into mass production. Even so it marked the beginning of a new era and it is quite likely that, a generation hence, it will be referred to as "the last of the small rockets."

THE END

BOOK REVIEW

"The Forbidden Garden," by John Taine. Fantasy Press, Reading, Pa. 278 pp; ill. $3.00.

Few American science fiction novelists of the last quarter century, excluding those writers who are known primarily for their magazine work, have achieved the standing or left the impression of the man who uses the pen name "John Taine". With the appearance of "The Purple Sapphire" in 1924, readers of the occasional adventure-fantasies of Edgar Rice Burroughs and his followers realized that something new had been added to the old formula. The plots were more or less familiar, the settings were in the conventional blank spaces on the map of the globe; but for almost the first time since Verne and the early Wells science appeared as a prime-mover in what was going on. That other contemporary giant, A. Merritt, often hinted at unknown scientific explanations for his fantasies, but in John Taine's books science was on the stage and acting like fury from start to finish.

"The Forbidden Garden," published by Fantasy Press as its third science fiction book, is John Taine's first new science novel since the greatest of them all, "The Iron Star," appeared in 1930. "Before the Dawn," brought out in 1934 by the technical house of Williams and Wilkins, is really in a class by itself—science recreated in fiction—and serves as a bridge between the John Taine science novels and the series of popular books on mathematics and mathematicians which gained the author new glory and probably more lasting fame in his proper person, Dr. Eric Temple Bell, Professor of Mathematics at the California Institute of Technology. "The Time Stream," published by Hadley, and those other top-notch Taine novels, "White Lily" and "Seeds of Life," which are to follow, are book versions of magazine stories, but "The Forbidden Garden" is brand-new Taine, never before published in any form.

A weirdly glowing purple sapphire sent an oddly assorted party of explorers into the depths of unexplored Tibet, back of the wall of the Himalayas, nearly a generation ago. A strange blue delphinium, like no other known plant on earth, is the bait which tolls another such party into the hinterland of the great Karakorum range, perhaps six hundred miles to the northwest.

Mystery is piled on mystery as they progress—the mystery of tangled purposes and of masked personalities which is the surface pattern of the plot, but also the basic scientific mystery to which all the rest are secondary, of the source of the unearthly flowers out of nowhere, and of the strange and powerful forces behind their origin.

It has been revealing to read John Taine's science novels through from "The Purple Sapphire" to the classic of them all, "The Iron Star," and excepting only "Green Fire," which I have never been able to find. These stories wear as well as when I first read them, and "The Forbidden Garden" is part and parcel with the rest, somewhere on a par with "The Purple Sapphire," which it closely parallels in setting and plot.

John Taine's books have all been science mysteries, not in the hackneyed "Craig Kennedy" sense of a mundane mystery solved with scientific gadgets, but as riddles in which there is a fundamental scientific problem to be solved at the same time that the complications in which the characters have managed to entangle themselves are worked out. This, of course, is a basic criterion of true science fiction—the science is the reason for the story. Mystery writers' guilds will undoubtedly blacklist John Taine for the way in which he blithely conceals clues, hints at future revelations, and otherwise manipulates his evidence, but they would miss the fact that this type of story is not a routine mystery-detective yarn. In a Taine novel the reader who has some knowledge of the forward edges of scientific thought and research can usually guess at these withheld clues and fit them together to solve the author's science puzzle a jump or two ahead of the hero.

Reading through these seven books, it is possible to trace what seems to be a changing focus of interest on the author's part from the physical to the biological sciences. Beginning in "The Gold Tooth," where the oddly curative properties of the unknown transuranium element were as important to the development of the plot as its effect as a catalyst in transmutation of mercury, John Taine has shown a greater and greater interest in that ultimate among biological and physical mysteries, the nature and origin of life and the way in which life forces are shaped by the chemical and physical forces of the universe. In "The Greatest Adventure," in "The Iron Star," in some of his magazine stories, and now in "The Forbidden Garden" a facet of this great question is the mystery to be unraveled by characters and readers alike.

John Taine seems to enjoy writing his science novels. In every one of his books he is standing at your elbow, nudging you with evident relish when you come to passages which were fun to write. His relish in such episodes as the spewing up of monsters in "The Greatest Adventure" or the grand hugger-mugger in the ravine in "The Iron Star" is obvious and enjoyable. He loves to lay on raw color

in a big way, and "The Forbidden Garden" has its climactic blow-up very little inferior to any which have gone before. In the episode of the human slug-things he has a touch as grim as any in Lovecraft, which may, incidentally, offer a rational explanation for the source of some of the Lovecraftian fauna.

Physically "The Forbidden Garden" is another example of the professional treatment which Fantasy Press, like Arkham House, is giving to its books. Unfortunately Donnell's illustrations are not so successful, primarily, I believe, because they are too literal. The illustrations in the average magazine seem dated after a short time, but this has not been true of the best illustrations in science fiction and fantasy, because editors and artists have been content to suggest rather than depict. The reader's imagination must be free to venture on its own in building up scenes and portraits of the actors. He can be led but should not be pushed. In contrast, the more conventionalized chapter-vignettes present a floral pattern which constantly emphasizes the botanical theme of the story, and really add to the book. Actually, I know of no Taine novel which has been satisfactorily illustrated. A Dunsany meets a Sime or a Lovecraft a Hugh Rankin all too rarely. "The Forbidden Garden," we can all hope, will be the first of a new John Taine series from Fantasy Press.

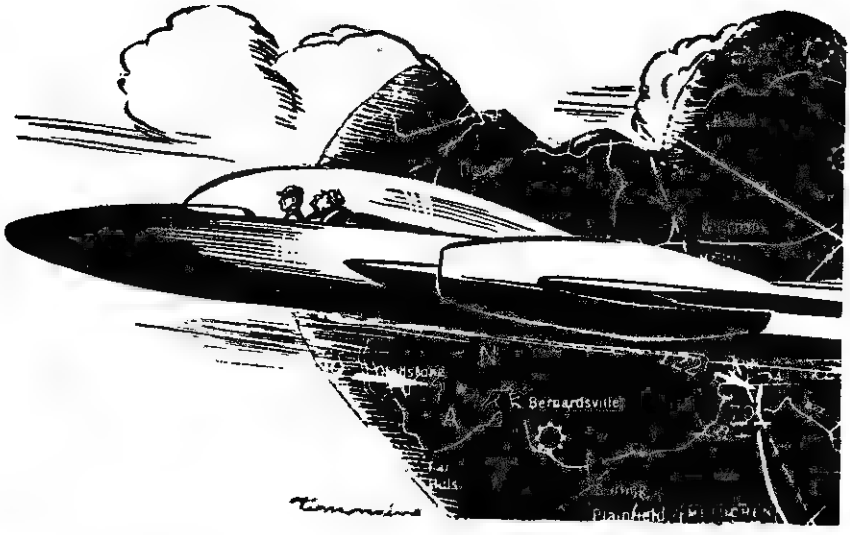
P. Schuyler Miller.

IN TIMES TO COME

In the development of "Dreadful Sanctuary," Eric Frank Russell has brought up, in a new form, the interesting, and extremely important point of human behavior that, so far as human actions are concerned, a group's beliefs are important—whether the beliefs are true or not can be dangerously unimportant! The concluding instalment next month makes the very deadly possibilities of that sort of thing into a tight-packed piece of action such as only Russell seems to write.

The difference in the approaches to the problem of story-telling are fascinating. I've just been reading copy on Russell's fast-action "Sanctuary"—and I've just finished reading a manuscript that just came in, one by another author. It's just as tense, just as fast, and just as fascinating, yet in an entirely different way. Where Russell uses dynamic physical action for fast pace, this manuscript uses the slow, steady-rising tension of developing, overpowering situation to produce tension and fast nonphysical action. The difference in approach is immense—but "The Players of A" is undoubtedly another classic of science-fiction. It'll start in the October issue, incidentally!

The Editor.



DREADFUL SANCTUARY

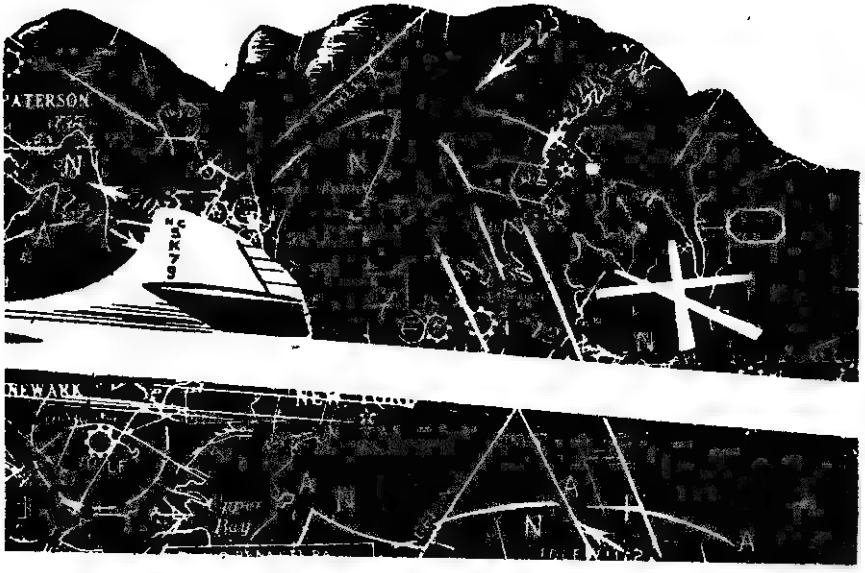
BY ERIC FRANK RUSSELL

***Second** of three parts. The most dangerous part of it all was that it didn't make any difference whether or not the Norman Club was right—they were just as deadly anyway.*

Illustrated by Timmins

Synopsis:

In the year 1972, amid disturbing conditions of international unrest, the seventeenth Moon-rocket becomes the seventeenth successive failure when it explodes before reaching its destination. At this time the eighteenth rocket is being built near Gallup, New Mexico. John J. Armstrong, a scientific experimenter, of New York, has completed several gadgets for the eighteenth vessel and thus feels that he has a personal interest in its fate. Bored by temporary mental inactivity, subconsciously irritated by surrounding symptoms of irration-



ality, and apprehensive that the new rocket may go the way of its predecessors, he decides to amuse himself by investigating the possibility of rockets being sabotaged regardless of their origin or nationality.

He enlists the aid of a number of skeptical friends, including Bill Norton, a journalist on the Herald*: George Quinn, official pilot of the New Mexico rocket; Eddie Drake, a technician once employed on the ill-fated rocket number nine; and Claire Mandle, physicist sister of Professor Robert Mandle who has died in mysterious circumstances while explaining to Armstrong a new theory accounting for repeated rocket disasters near the Moon. Gradually compiling a list of names of possible suspects, he is forced to hire Hansen, a private inquiry agent, to obtain certain information about these people. His object it to find a common denominator—on the theory that sabotage on so world-wide and impartial a scale can be the work only of an international organization possessing no nationalistic loyalties.*

The list of suspects grows rapidly. Aided by his secretary Miriam and several of his men, Hansen devotes his full time to discovering the brotherhoods, fraternities and other organizations to which the suspects belong, passing the results to Armstrong for his analysis. Meanwhile, Armstrong discovers that Claire Mandle is being double-shadowed. With Hansen's help he finds that the final shadowers are the F.B.I. who refuse to tell him the reason for their interest in Claire Mandle. He concludes that she is thought to have some top-secret information held by her brother Bob before his death. The

first shadowers, not yet identified, presumably are after the same information.

Armstrong's flat in New York and his laboratory in Hartford are raided and searched by the mysterious unknowns who apparently believe that he shares this secret. They leave in the flat the body of Clark Marshall, former rocketeer, with whom he has been trying to make contact for some time. The raid is recorded on an automatic camera installed in the flat, but the resulting picture fails to reveal how Marshall met his end. Marshall has died in the same way as Professor Mandle—of cardiac thrombosis. However, the millimeter film does show that one of the raiders is the same sandy-haired man who shadowed Claire Mandle. It also shows that Sandy-hair is armed with an unknown weapon resembling a torch.

Believing that the authorities are more concerned about rocket-wrecking than they're prepared officially to admit, and knowing that her brother Bob had been engaged on highly confidential work connected with rockets, Claire Mandle evolves the theory that the New Mexico rocket is a mere decoy, and that another is being built in secret elsewhere. She thinks that she and Armstrong are credited with knowledge of this other rocket, hence the interest taken in them by both the unknown raiders and the F.B.I.

Correlating the large amount of data gathered by Hansen, it is not long before Armstrong discovers the existence of a seemingly innocuous organization of international scope, known as the Norman Club, two of whose leading lights are Senators Lindle and Womersley, long known as leaders of political opposition to rocket expenditure. He decides to visit the Norman Club forthwith. Arriving there, he is taken aback by being received as if expected. A strange machine emits a blue flash which knocks him unconscious, and he recovers to find himself in a cell.

The unseen occupant of an adjoining cell tells him that he has been asked the question, "What is life?" and that his life depends on the answer he gives. He warns Armstrong that he, too, will be asked a question the answer to which may settle his fate once and for all. Long worried by vague, surreptitious suggestions of unbalance, Armstrong wonders whether he has been smuggled into an asylum, but he clings grimly to faith in himself and doubts the actuality of this deadly quiz game.

He is not left long in doubt. His neighbor is taken away by peculiary phlegmatic and unemotional guards and does not return. When his next meal arrives, he finds a note on his tray. Hurriedly, he reads its neat typescript.

"Dear Mr. Armstrong: What may happen to you ultimately will be decided by the manner in which you find an answer to the simple question inscribed below. Of course, you will give it serious thought since your fate is a serious matter. Take your time about it—you will have at least two days in which to

give it your serious consideration."

There was no signature. Only the question—his *question.*

This was the pay-off!

Six fateful words!

Part 2

VII

Six words totaling a mere twenty-one letters yet demanding a response on which depended an unknown fate. True, the typewritten note had made no direct mention of death; it derived its menace from what it left unsaid, from that which it left to the reader's imagination. What the quiz-masters had in store for him could be anything, anything at all—but if they were powerful enough to defy world governments and delay the conquest of the Moon by at least a couple of decades, then they were big enough to have no scruples about the way to deal with one man. Six words—they weighed as heavily as a corpse on a rope!

He scanned them for the third time, his eyes troubled, speculative, a little uncertain. The sentence was printed in blue pencil, boldly, confidently, challengingly, as if the writer had gloried in the satisfaction of posing an unanswerable problem. What it said was:

How do you know you're sane?

Flipping the paper onto the top of the bureau, Armstrong sat himself at the table. He pushed the tray and its meal aside, held his head between his hands, his elbows on the table. Contrary to his earlier reactions he was no longer interested in the fried chicken. The sight of it didn't as much as stimulate his salivary glands. His reflex had been inhibited. That typed note was the Pavlovian bell—and the dog refused to drool!

Between his hands he let his thoughts play as they wished. If sane, they might get him somewhere even yet. If insane, they'd play despite him. Norton was right—yon Cassius, that's me! I think too much. Can I exist without thinking? "I think, therefore I am!" I am . . . what?

I am John J. Armstrong, or so it is alleged. I have made ingenious things conceived by John J. Armstrong. Some people have praised those things, have recognized them as products of sanity, have been kind enough to ascribe to me a touch of genius. And . . . and . . . genius is akin to madness! There I go again! Am I a borderline case? Have I prospered one side of the border and now slipped over to the other side? Is this the nuthatch?

Anyway, what makes them think I'm not sane? How do they know that they're sane themselves? What is sanity? Is there any positive definition of that? If there is, who defined it—and how did he know that *he* was sane? How does *anyone* know they're sane?

HOW DO YOU KNOW YOU'RE SANE?

Answer: Of course I'm sane!

How do you know that?

I *must* be sane!

Why?

Because I'm sane in my own estimation.

So is every other lunatic!

They shoot horses, don't they? And they put lunatics away, don't they?

Oh, yes, the lesser lunatics incarcerate the greater ones. It has been said that the difference between those in jail and those not in jail is that the latter have never been found out. The difference between those in asylums and those not in asylums is—

"Shut up!" Armstrong was dumfounded by the sudden and savage shout of his own voice. It shocked him upright; he left the ..ir, began to pace his cell.

Don't worry about that, sonny boy. It's nothing—nothing at all. Crazy people often talk to themselves. Sometimes they shout. Sometimes they scream. Sometimes they shriek way up on the high notes, where only dogs can hear. Sometimes they whisper, whisper, whisper, while their red-lit eyes watch the thing which is not sitting on their shoulder. They do other things. They carry a talisman so they won't be run over in the street. They have a lucky number which controls their lives and, sometimes, when they do a thing, they repeat it the same number of times to "make sure." They touch doorknobs when they think nobody's looking, because it's a terrible thing to let a knob go untouched. They avoid stepping on the cracks between paving blocks because to step on a crack would split your soul. They make faces at themselves in the washroom mirror when nobody else is there to see. The lunatic needs solitude to expand his lunacy, to bring it to full bloom. But you don't do any silly things like those, sonny boy—or do you?

HOW DO YOU KNOW YOU'RE SANE?

Do you consider it incumbent upon you—in fact, imperative—to adopt a special attitude whenever a collection of brass instruments produce sonic vibrations in a certain sequence? What, you wouldn't do anything so ridiculous? Fifty million Frenchmen do it every time the band plays the *"Marseillaise"*—and fifty million Frenchmen can't be wrong, can they, sonny boy? Would you hold your right foot in your left hand every time you heard "Skiddin' With My Shiver-Kid" if a hundred million others did it too, and if they expected you to follow suit?

You would not?

You're a liar!

"Loonies are liars," said Armstrong to nobody. "They lie to themselves, persistently and glibly, because they can deceive themselves—because, being loonies, they live in a dream-world of their own. I am not a liar to myself. I am not a blithering imbecile. I talk to myself the better to co-ordinate my thoughts, as other people occasionally do. It is a symptom of introspection and has no bearing upon the question of sanity."

The little speech soothed him, but it failed to convince. He erred on

the side of skepticism because he knew how remarkably easy it is to convince those who want to be convinced, and he had no intention of substituting emotional desire for mental reasoning. One must think with one's brain, not with one's glands. That should have some bearing upon this tormenting problem—the *mode* of thought determines sanity. If the cerebral processes follow a particular pattern then, by virtue of that, one is sane. If they follow some other pattern, and especially if they're biased by emotions, one is insane.

But what is the sane pattern . . . and who says so . . . and how does he know *he* is sane?

He returned to the table. Pulling the tray toward him, he surveyed it without enthusiasm, and grunted irritably: "Darned if I feel hungry but I'm not going to let them think they've got me scared—because they haven't!" Whereupon he wolfed the lot.

After that, he turned his chair to face the grille, let his mind toy with not very scientific notions regarding Claire Mandle. He could picture her tip-tilted eyes peeking at him right now. With optics like those she ought to wear an emerald-green pixie-hat with a ridiculous little tail sticking out of its top. Yeah—nice! A time might come when he'd buy her one and make her wear it.

Meanwhile, he kept his own eyes on the grille. When the guard came to swap a full tea tray for the empty dinner tray there would be another sort of emptiness waiting for him. The stunt might prove futile, but it was worth trying and at least would break the monotony. Foo-foo merchant or not, he'd give them as much food for thought as they'd given him.

Silent and impassive as ever, the guard duly appeared with his tray. Removing the coffee pot, he handed it through the bars, slid the tray under the bottom of the grille, waited for the empty one to be returned.

Armstrong jeered at him: "Bet you can't prove it either."

The guard made no response, didn't as much as bother to glance at the speaker.

Carelessly shrugging his broad shoulders, Armstrong commented: "You must have been to see Consuelo Eguerola's latest movie. It was red-hot, so I'm told. Guess you've been petrified ever since. Snap out of it, kiddo—she was made for another."

The guard made an impatient gesture. Armstrong looked him over slowly from head to feet, then from feet to head, an examination that produced no effect whatever. Giving it up, he brought the empty tray, passed it under the grille. He was careful to hold it an inch above the floor, but as it got through and the guard bent to pick it up, he let it drop.

Something fixed under the tray's farther end broke with a sound of splintering glass and, as Armstrong backed hurriedly away, a spurt of misty vapor shot from the floor into the guard's face. The sur-

prised victim remained bent for several seconds during which his body jerked as he tried in vain to straighten up. Then he toppled forward and lay with his face in the tray.

Snatching the cloth from the table, Armstrong flapped it vigorously. Pausing, he sniffed the air, flapped again, advanced gradually toward the grille, had another sniff. For a short while he fanned at the grille itself until satisfied that the fumes were dissipated. Reaching through the bars, he lifted the guard with one powerful arm, held the fellow erect.

It was at this point he suddenly became aware of two more guards standing in the passage. They were four or five yards away, and he could see them only because they were lounging against the opposite wall. Negligently they leaned on the wall, side by side, their hands deep in their pockets, their hard features devoid of anger, alarm, or any desire to interfere. The eyes of both were on him, watching him with a strange air of aloof interest.

Still holding up his senseless victim, and keeping a wary eye on the two onlookers, Armstrong snaked his other arm through the bars and frisked the guard. He made a thorough job of it, trying every pocket. The procedure took some time, during which the others studied his actions academically. It was the whackiest situation in which he'd ever been.

In the end, he lowered the guard, let him slump gently to the floor. He felt disgusted with himself. Not a key, not a weapon, not one object worthy of the effort. The waiting pair came to the other side of the grille, picked up their unconscious comrade.

The one nearest to the grille looked into the cell and said: "You've been searched. Where did you get that knock-out bulb?"

"Ah, a kind word at last!" approved Armstrong. "I thought you'd all had your tongues cut out. How about coming around for a cozy little gossip sometime?"

"You won't tell us?" the guard persisted.

"You're not old enough to be told that sort of thing yet. When you've eaten all your spinach and grown up a great, big man, pappy will tell you."

It was like water off a duck's back. The fellow betrayed no annoyance, resentment or any other human reaction. Veritably, whoever chose the guards must have hand-picked the world for its most phlegmatic types.

Accepting his refusal as if it were of the least consequence the guard hefted the victim's head and shoulders preparatory to carrying him away. He asked: "How long will he be out?"

"About twenty minutes," Armstrong told him. "He'll be O.K. after that."

The other nodded in understanding, and the two moved off bearing the body between them. Armstrong mooched around in his cell. He was decidedly disgruntled. Not a

key, not a weapon—and it wasn't hard luck, either. Luck had nothing to do with it. The guard had nothing because the powers-that-be ordered that he have nothing, of malice aforethought. They'd been ahead of him there.

And the attitude of the witnesses had been unnatural, to say the least. He'd have enjoyed it more if they'd acted like enraged apes, and made for him breathing fire and slaughter. If he'd been able to grab one of them, he'd have lugged him clean through the bars, thinning him down and stretching him out in the process. They refused to grant him even the satisfaction of a little horseplay.

Why do you want horseplay you wondering, wandering, muddle-minded nitwit? Why do you crave violent action? *How do you know you're sane?*

There was a dictionary in the row of books. Pulling it out, he leafed its pages. It said: "Sane. (L. *Sanus.*). Sound. Not disordered in intellect; in one's right mind; of sound reason." Of course, this brought up the inevitable points for the hundredth time: What is not disordered, or is right, or is sound, and who says so, and what are *his* qualifications for determining what is or is not nuttish? Are asylum regulations, rules and laws determined by any special one of its inmates? Not on your sweet life! Who is to say that one is mad if none can prove that they are sane?

Slamming the dictionary back into its place, he extracted the adjoining book. "The Snake Pit", by Mary Jane Ward. He looked it over. It was about life in a jello foundry, a feather-and-treacle weavery, a nut-hatch.

Studying the last page, he read, "I'll tell you where it's going to end. When there's more sick ones than well ones, the sick ones will lock the well ones up!"

That book also shot back into place with a bang as he growled an underbreath imprecation. The sick ones will lock the well ones up—or had they done so already? What if people in asylums really were sane? But that was absurd. How to find a positive standard of sanity if there were no positive way of identifying insanity? Why could an emphatic individualist be considered insane if poor, but merely eccentric if rich? Did the possession of a million frogskins determine the balance of the brain? To suppose so was nonsensical.

Psychologists and psychiatrists had been seeking a positive standard for years and had compounded with their inability by making decisions based on public interest, and sometimes on private interest. And if said psychologists and psychiatrists were merely profounder examples of the general, all-pervading nuttiness, who was entitled to say that this murderous maniac should go free or that liberty-lover should be locked up?

"Let him that is without mental flaw snap the first padlock."

There had to be an answer to this question, an answer which could

be found if he remained cool, calm, collected; if he refused to be fooled by its outrageous pertinence. Yet an answer satisfactory to himself might be anything but satisfactory to his inquisitors, in which case he would take a dive with his feet set in a tub of concrete, or something just as effective. Possibly it might be best to give them an answer contrary to whatever they expected, to look at them cross-eyed, to giggle and make extravagant gestures, to tell them, "I am not sane and never was sane. I am the daffiest character this side of Hades." Then, in low, confidential tones, "Know who I am? I'll tell you—I'm Hutsut Rawlson on the Rillerah!" After that, a triumphant chortle. That would give them something to think about. But what would they *do* about it?

"They'd do no less than if I'd responded wrongly," he told the wall.

He wondered how the old dodderer had got on with his what-is-life question. Perhaps he knew the answer by now, having found it in death. There was no way of telling whether the oldster had been the first or the fiftieth victim in this quiz game, nor what sort of questions the others had been asked before they stepped into the eternal unknown. Questions, questions, questions, they'd drive a guy nuts—if he wasn't nuts already.

Approaching the bookrack, he eyed it warily. If these tomes cunningly had been chosen to suit the situation, he'd best lay off them. "The Snake Pit" suggested deliberate selection, a work carefully calculated to unsettle his bothered mind. On the other hand, if they were permanent and haphazard adjuncts of his cell they might come in useful. Temporarily, he could get away from his problems and find relief in the depths of a book.

His questing gaze found Stuart Chase's "The Tyranny of Words" and he pulled it out and scanned it. All about semantics. Well, that should be helpful. Anything would do to unfrock imaginary devils. Since he was experiencing the psychical tyranny of six fateful words he would lose nothing by gaining a better understanding of the tyrants.

Settling in a chair, he drove his problems aside, disciplined his thought-stream and concentrated on the explanations and ironical comments of Chase. They held his attention partway through, at which point he reached a cogent passage which made his mind resume its hateful cavortings. Blinking, he read it again, murmuring the words distastefully.

"A good semantic discipline gives the power to separate mental machinery from tangible events; makes us conscious of abstracting; prevents us from peopling the universe with nonexistent things. It does not dispense with poetry, fiction, fantasy, imagination, ideas, intellectual emotions. It checks us from acting as if fantasies were real events worth fighting and dying for. It checks a kind of dangerous hypnotism, abnormal reversals of nerve

currents, *mental states approaching insanity.*"

Violently, he slung the book into a corner. "Mental states approaching insanity." Was Chase peculiarly qualified to say, "That is sane," or, "That is not sane"? Are all authors arbiters in this matter? If not, who is?—goldfish-gulpers? What was it the old farmer said to his wife? Oh, yes, "All the world's mad except thee and me and thee's a bit queer at times!"

Returning to the rack, he snatched the next book, began to read it with an air of grim fatalism. If this one had a similar touch, he could conclude that these tomes had been chosen specifically for this occasion. Three in a row would be too much for coincidence. Choice would mean preparation, and that in turn would signify that his mysterious captors had anticipated his coming as, in fact, they had suggested when first he'd walked into the Norman Club.

He found the touch all right. The book was Bertrand Russell's "Let The People Think", and he tossed it after Chase's volume when he got to the point where it said: "There are some who think that psychoanalysis has shown the impossibility of being rational in our beliefs, by pointing out the *strange and almost lunatic* origin of many people's cherished convictions."

Swearing with unashamed vigor, he sought a switch to cut off the lights, failed to find one, lay down on the settee and tried to sleep. At midnight, the lights went out of their own accord, but it was long, long afterward before he slid into uneasy slumber. Without meaning, with no significance that he could understand, a phrase kept recurring to him as he drifted away, ". . . and in some corner of the hubbub couched, make mock of that which makes as much of thee." The same quotation came to him immediately he awakened late in the morning, tired, bleary and ready for trouble.

They gave him a further thirty-six hours to fight with his problem, by the end of which he appreciated how much even the strongest mind can be worn down by an obsession. *How do you know you're sane?* Don't think of it. Take your mind off it. Think of something else, anything else. *How do you know you're sane?* Think of Quinn waiting for his chance at the Moon. Think of Fothergill. Think of that time you caught a black bass not as big as a whale. Think of the day you planted the solar compass for ten thousand smackers and a fat dividend. Think of the dinner Ma Saunders made last Thanksgiving. *How do you know you're sane?* It was a psychic form of water torture; the steady, unending *drip-drip-drip* of a question which came back and came back and kept on coming back.

By the time the guards arrived he welcomed them with relief. There were six of them, burly, blank-faced, as alike as brothers. Unlocking the grille, they beckoned him out, conducted him along the corridor, through four small rooms

and into a great hall. As he went with them his pace was heavy and unfaltering, betraying nothing of the nervous stumbling of his predecessor. His eyes were alert as they weighed his surroundings. His chief regret was that his escort had not been a little smaller in numbers. Any two of them would have been fair prey for his outsize muscles, three might not have been too many, and he'd have taken a chance with four. Whoever had decided on six had estimated the requirements to a nicety. It would be sheerest folly to start something he could not finish.

Outside the big double doors at left of the hall, the escort stopped, and one of the guards ordered: "Take off your shoes."

"What's this a mosque?" Armstrong asked.

"Take 'em off."

Bending down, he removed them, placed them against the wall.

A guard pushed open the doors, signed him to enter. He went through defiantly, his stockinged feet treading silently on the thick carpet. Taking a chair facing a huge, ornate desk, he plumped himself into it, stared belligerently at the man seated behind the desk.

The latter gazed back with polite interest. An aristocratic individual, his iron-gray hair was perfectly barbered, he had shrewd, dark-brown eyes and a thin, sensitive nose, slightly beaked, giving him a hawklike appearance. His lips were full, a little pursed, and his mouth was good-humored.

Tossing a brightly plated object to Armstrong, who caught it deftly, he spoke with a voice both deep and rich: "You may have your cigarette lighter back, Mr. Armstrong. It is very ingenious if I may say so. What is its range?"

"About seven miles," Armstrong told him curtly.

"Indeed? Its little battery interested us most. A remarkable job, in fact quite revolutionary. So, too, are the couple of tiny button-tubes." He rested well-manicured hands on his desk and smiled. "We extracted the crystal, of course. We couldn't have you oscillating wherever we took you, with friend Hansen dutifully following us around. A pity, such a pity, but we have to consider ourselves. You radio people call that gadget a squagger, I believe?"

"A bleeper," Armstrong contradicted grumpily. "It goes *bleep-bleep, bleep-bleep.*"

"Dear me! We might have been bleeped into an embarrassing state of affairs if we hadn't had the foresight to search you for booby-traps, mightn't we?"

"You aren't out of the woods yet," Armstrong assured him. "Not while I'm still wearing my pants."

For some incomprehensible reason, this remark appeared to please the other. Chuckling his approval, he surveyed his captive with a friendly air. Then he pressed a button on his desk, spoke into a little visivox.

"Find anything?" A voice responded tinnily, and he said, "In the heel of his left shoe, eh? And

a pack of incendiary leaves in his right? We should not have overlooked those!" Red sparks leaped into his amiable eyes. *"Who* overlooked them?" Getting the reply, he snapped, "Send him into me immediately I've finished with the case in hand." Taking his finger off the desk-stud, he leaned back in his chair. The harshness faded out of his features as he regarded Armstrong blandly.

The latter said: "I guess you're going to smack his diapers."

"It is of more importance to decide how we're going to cope with you," retorted the other pleasantly. His face remained smooth but his eyes grew hard. "We asked you a question. Have you found an answer, or do you crave further time in which to consider it?"

"I crave nothing from anyone—much less you." Armstrong gave him a look of equal hardness. "I have the answer."

"What is it?"

"I don't know that I'm sane."

"That is your definite and final reply?"

"It is," asserted Armstrong. "And I don't care a hoot whether you like it or not. So far as I'm concerned, you can go play it on your bagpipes."

"Tut!" reproved the other. "Let's not be unsociable. What I, personally, may think of your answer has nothing to do with the consequences thereof. For your own satisfaction, I may say that I consider your reply a most excellent one."

"That's mighty white of you," jibed Armstrong. His gaze was challenging. "I doubt whether you could have thought up a better reply yourself, or anyone else for that matter."

"A reasonable assumption considering the very misleading circumstances under which you've been living," the other observed. "But an assumption which is totally wrong."

"Eh?"

The inquisitor sighed reminiscently and said: "As it happens, I know that I'm sane. The fact has been ascertained beyond all shadow of doubt, and it can be proved afresh any time I wish."

"Bunk!" put in Armstrong, explosively.

Disregarding the comment, the other went on, his rich voice even-toned, unhurried, unemotional. "Furthermore, every person in this building differs from most people in that he is demonstrably sane. Every member of the Norman Club is completely and indisputably sane." His eyes were cool and confident as they leveled upon his listener. "A person needs one major qualification for membership in the Norman Club. He must be a sane man, a *normal* man—*a Norman!*"

"What?" Armstrong stood up, his big fingers twitching.

"He must not be one whose brain is contaminated by certain of his own body fluids," pursued the other, imperturbably. "That is to say, he must not be a *humoral* man—a Human."

Armstrong said carefully: "Are

you trying to tell me that you are not human?"

"Sit down, sit down! Calm yourself! Unwarranted excitability tells against you." He waved a soothing hand, watched Armstrong sink reluctantly into his chair. "I am human only in the sense commonly accepted in this unfortunate world, namely, in the sense that I am flesh and blood, structurally and organically no different from yourself. But in the sense commonly accepted elsewhere—the proper sense—I am not a Hu-man, thank heavens! I am a Nor-man!"

"What do you mean, commonly accepted elsewhere? Where else?" Armstrong demanded.

"That is something you've yet to learn." He put his finger on the desk-stud. "And the moment is not quite ripe." Taking his attention from his listener, he spoke into the visivox. "This case is ready for Room Ten."

Armstrong stood up again. He was ruffled, untidy, and conscious of the creases in his slept-in suit. "So I've plenty of moments to come and still stand a chance of discovering what's behind all this melodramatic balderdash?"

"I should hope so."

"Then why all this daffy play with questions, backed by vague hints of death?"

The other smiled broadly. "The question was designed to tempt your mind to a state of exhaustion necessary for what is about to follow, for a tired mind is both receptive and uncombative. As for what you describe as threats, well, I can only assume that you've been misled by the pessimism and apprehension of the rather weak individual in your neighboring . . . ahem . . . apartment."

"Cell," corrected Armstrong.

"All right then—we'll call it a cell. But it was a little foolish of you to permit yourself to be so misled, don't you think? Our message to you bore no threat. Indeed, we wish you no harm at all."

"O.K., I'll take you up on that—give me my shoes so that I can walk out of this dump."

"Not yet." He glanced at the doors as they opened and the guards came in. "Not yet, Mr. Armstrong. We hope first of all to grant you the immense satisfaction of knowing that you really are sane. I sincerely trust that we shall not fail!"

"Supposing that you do fail?"

The red gleam crept back into the other's eyes. "I shall be immeasurably saddened."

"You bet you will!" promised Armstrong. With a warning look which was in blatant defiance of all the odds, he joined the guards, went outside, put on his shoes. He didn't bother to shake the shoes before donning them; that brief conversation over the visivox was enough to show that the hollow heels had been emptied.

Straightening up, he gestured toward the double doors, said to one of the guards: "Who was that smoothie?" He didn't expect a reply, and was surprised when the guard answered.

The fellow said: "That was Senator Lindle."

Armstrong gaped. "Lindle? For Pete's sake! Hasn't he read the Constitution?"

"You should have asked him," the guard shot back. He pointed across the hall. "There's where you're wanted next—Room Ten."

"What goes there?"

With utter lack of expression, the other replied: "That's where we'll have a look at your thinkbox and decide whether—"

He did not finish the sentence; he clipped it short and ducked swiftly to avoid Armstrong's sudden and vicious punch. The blow aimed for his jaw was too fast to dodge; it landed on his forehead. He switched from the perpendicular to the horizontal and stayed there.

Once again it was demonstrated that these fellows were not quite as other people are. None of the other five guards showed any undue excitement. Not one of them so much as indulged in a startled exclamation. They accepted the situation philosophically and instantaneously, and their reaction was rapid and concerted. In complete silence, and with appalling efficiency, they jumped him together, bore him to the carpet, held him there. Heaving mightily, he tossed one of them off, but the fellow bounced back again. The one first smitten recovered his wits and also joined the fray.

The lack of noise was unnatural as the whole seven struggled furiously on the carpet, the heap occasionally rising and falling as Armstrong's immense muscles lifted the entire pile. But six were too many. Pinning him down, they took expert grips on his big limbs, bore him bodily into Room Ten.

There, by main force, they strapped him to a horizontal metal rack set in the middle of a gigantic mass of apparatus. They made him as ready for the roasting as any turkey on a spit.

VIII.

Even the five big straps binding him to the rack were barely enough for a victim of Armstrong's unusual build. There was a broad strap around his ankles, another just below his knees, another across his broad hips, a fourth around his waist and a fifth running over his chest. The veins stood out on his neck and his heavy face went red with strain—then the chest strap broke with a loud snap. The tremendous effort to burst two-inch leather was impressive and spectacular, but it did him no good. They added four more straps, making eight in all. After that, they rubbed their bruises, regarded him with neither admiration nor animosity, and left the room.

Alone on the rack, Armstrong twisted his head around as far as it would go and estimated his surroundings. For a torture chamber, it bore some resemblance to a radio station. Amid the close-packed and highly complicated litter of junk which was all around him he recognized several fixed condensers of imposing size, an array of vitreous high-wattage resistors, several hydro-cooled, carbon-anode tubes larger than goldfish bowls, a number of mercury vapor stabilizers, and several wire-wound double-spheres set one within the other like ancient variometers. A lot of the wiring, he noted, was not done with solid copper but with slender silver tubes carefully brazed at all junctions. Some parallel runs of these tubes were threaded through large glass beads and directed between parallel strips of aluminum-foil which he presumed to be parasite-suppressors.

This similarity to a radio-junk-pile was entirely superficial; as far as he could trace the wacky circuits they bore no relation to accepted practice. No radio technician in his right mind would link the suppressor grid of a big, multi-screen tube to an extra and seemingly useless terminal embedded in the plastic electrolyte of a fixed condenser. He could see this particular condenser just above his strapped feet. Without any outer casing, it was a cube twenty inches on the side, its thick, lead-colored plates separated by slabs of transparent, amber-hued stuff like yellow glass. The terminal in question was buried in the glass, no doubt of that! It was daffy!

Behind his head, where he could get no view of it, was still more of this incomprehensible array. The apparatus surrounded him on all sides excepting the one employed to fix him to the toaster. Partly over his head, and partly behind it, he could just glimpse the rounded rim of a shining, bowl-shaped object like a huge helmet. This, he concluded, was the brain-picker. Glumly contemplating what little he could see of it, he theorized about his fate. By the looks of it, they had discovered some electronic way of driving people nuts without leaving physical scars or mauling the cerebellum; a method effective enough to dispose of unwanted snoopers as certainly as if they'd

been slaughtered outright; a method sufficiently new, strange and crafty to allay the suspicions of any mental specialist who might examine the victims later on. Yes, that was it—when they'd finished with him they would let him go—too crazy to know Friday week from breakfast-time. Vainly he heaved at his straps again. They creaked, but refused to give.

A voice said softly: "You find this a little more complicated than your bleeper, Mr. Armstrong?"

Turning his head, he saw Lindle standing at his side. The man's sharp, well-shaped features looked more hawklike than ever, yet contrived to hold a queer suggestion of basic amiability and good humor.

"Have your fun while it lasts," Armstrong growled. "Any cock can crow on its own dunghill. Later, comes the knife!"

"My dear man, I would not presume to crow." Lindle made a gesture of protest. "I have the utmost admiration for you as well as for all your works which, let me say, are more ingenious than is this apparatus if one considers the grave handicaps under which they were devised."

"Thanks for nix. In due time, I'll admire you the same way—strapped down."

Lindle smiled, and asked: "When you were very young, did your pappy have to drag you to the dentist, or did you run to him willingly, of your own accord?"

"I dragged pappy," Armstrong said sourly.

"You *are* bellicose," commented Lindle, still smiling. "However, it is not your fault. I shall be delighted to resume the conversation later on, when you've been suitably treated." Raising his hand, he beckoned. An old, white-haired man wearing bottle-lensed glasses and a long, white coat, came into view. The latter peered short-sightedly at Armstrong as if he were a rabbit pinned on the board and ready for dissection. Lindle said: "This is Dr. Horowitz. He will operate." Then to Horowitz, "All right—carry on!" With a final smiling glance at the victim, he went out.

Going to the control board, Horowitz closed a big copper switch. The bank of mercury vapor tubes popped, spluttered, emitted flickering purple light. The carbon anodes of the largest tubes gradually grew cherry-red, then golden. A strange and steady hissing like that of escaping steam came from the apparatus as it warmed up, and some invisible part of it beneath the bottom end of the rack began to warm Armstrong's feet with the quiet, dutiful efficiency of an electric radiator. There was a slowly strengthening smell of hot metal, roasting plastics and ozone.

Straining uselessly, Armstrong promised Horowitz: "Some day I'm going to choke you with your own ears."

The other turned, surveyed him glassily. His eyes were huge and owlish behind their powerful lenses. He said not a word. Taking hold of the rim of the helmet, he low-

ered it gently over Armstrong's head and face. The latter caught momentary view of several eccentricly-wound coils within the bowl, then darkness fell. He heard a few quick steps, the sharp click of a second switch being thrown. Something snatched his brain right out of the brainpan and started to do things with it.

There was no physical pain but much physical unpleasantness resembling that of when one dreams of falling immense distances and awaits in terror the inevitable bump. An eerie sense of separation was the worst part of it, a sort of splitting which was violently unnatural and somehow blasphemous. He seemed to be a fleshly, mundane and rather dopey Armstrong watching the ruthless examination of another, spiritual, supermundane Armstrong. The one was as much part of him as the other, and the limited senses of both were revolted by the severance which violated every law.

A million questions rained upon his isolated mind with such incredible swiftness that his purely automatic responses were registered before any of them had time to impress themselves upon his muddled memory. A million pertinent problems thrust at him and probed his intellect to every extreme. How do you react to this? How do you react to that? Does this statement mean anything to you? Do you believe this, that or the other—and why? Do you reject this, that or the other—and why? Are you sympathetic toward this? Does that repel you? Do you think you might still be sympathetic or repelled if reconnected with your glandular system? A million per minute, thousands per second, hundreds per fragmentary moment. No time to think, to ponder, to reason, to argue, no time to call in latent prejudices, preconceptions, conventional acceptances or any other part of his native conditioning. Time only for immediate and automatic reactions. It was like poking an amoeba. Does it quiver—does it shrink—does it crawl?

The flood poured on, an immense stream. Is this hot or cold? Light or dark? True or untrue? Weigh this fact—or is it a fact? Calculate this sum. Would you say that this is ethical? *In certain circumstances, eh?* Well, is *that* ethical? *In certain circumstances, eh?* Do the circumstances determine the ethics of any deed? *How do you know you're sane?* What is the difference between right and wrong? Could this be right here but wrong there? Could this be right today but wrong yesterday—and wrong again tomorrow? Could this be right for you but wrong for me? Is anything wholly right or wholly wrong, everywhere, in all circumstances, now and for evermore? Is reason reasonable? Is faith reasonable? *How do you know you're sane?* What meaning, if any, do you attach to the following words . . . ? Is intuition reasonable? Is logic dependable? Is thought really rational?

Down, down, down he sank into

a deep, dark sea of appalling cogency, his mind producing obedient jerks to every one of the multitudinous thrusts and probes. How long it continued he had no notion, for time and space had ceased to be and there was nothing in the cosmos but his naked spirit explaining itself to an electronic god.

Warmth and complete bodily exhaustion were his first sensations on returning to consciousness. Limp upon the metal rack, he lay with his dazed eyes staring unseeingly at cooling tubes and shrinking inductances. The strength within him made him feel as mighty as a wet rag. His arms were quivering and he had a tremendous headache. Slowly he became aware that the straps no longer clung to his body and that Horowitz was posed by his side studying him silently.

In poor English, with a guttural accent, Horowitz said: "Here, drink this—it will make you feel better."

A hot fluid raced down Armstrong's willing throat and made a glow inside him. Swallowing the lot, he licked his lips, closed his eyes. Semiconsciously he realized that the stuff was drugged, for he could feel it working on him already, but such was his exhaustion that he gave himself up to it without protest and soon fell into slumber.

At the scientist's call, the guards came in, lifted the big body from the rack, bore it back to the cell. There they composed him and left him to sleep it off. The way they did the job was as phlegmatic as ever, as though carting bodies was a daily chore. But they, too, had had a taste of the psychotron.

He slept right around the clock, washed, shaved, had a meal and was feeling himself again when the escort arrived to take him out for the second time. Again they paraded along the corridor, across four rooms and into the hall. Again he went through the double doors, took a seat and stared over the desk at Lindle. The latter gazed back, his expression one of pleased satisfaction.

"Well, Mr. Armstrong, it looks as if you've struggled to the end of the trail. It was long and winding and full of traps and stumbling blocks, but you got there just the same. I congratulate you."

"The end isn't yet! And it won't come until—"

Lindle raised an arresting hand. "I know, I know! You want to tell me just what you think of me—but let's forget personalities for a little while, eh? There are a lot of things you wish to learn, and the time's now ripe to tell you of them. There are no longer any good reasons to conceal them from you; and there's one good reason why you ought to be told."

"What reason is that?"

"You are sane!"

"Just fancy!" said Armstrong, with false delight. "I can hardly believe it myself."

Bending forward, Lindle eyed him sharply. "Now look, I can give you some very important facts, some facts which should astound you no little. Indeed, they may

strain your credulity to the utmost, though that makes them none the less true. But I am willing to give you this data only under certain conditions."

"State them," invited Armstrong, flatly.

"You must abandon your quite natural feelings of antagonism which arise from your emotions rather than from your mind. I do not ask for forced cordiality. I do not ask for friendship—yet! But I do insist that I must be heard unemotionally, impartially, without prejudice. Let us forget recent events and talk frankly, as man to man."

Armstrong mulled it over. From his viewpoint, the other was demanding that temporarily he cease to be human, to become as cold-blooded as a fish. He must sit and listen as phlegmatically as a graven image. Well, perhaps he could manage it. They'd kidnaped him, and they'd annoyed him, and they'd subjected him to some crazy experiment, but the basic fact remained that he still had his health and strength and a whole skin. No court would uphold a prosecution for assault on the evidence of his physical body. Maybe he could manage to control his emotions, to forget for awhile that he was anything other than a friendly confidant. At least, he could try.

"O.K., I'll do my best."

"Good!" approved Lindle. Folding his arms on the desk, he started with, "As you've noticed and perhaps have thought about sometimes, the peoples of this world can be divided into various kinds in various ways, also that some methods of classification cut squarely across other methods. You can, for example, divide them according to the color of their skin. Or you can do it phonetically, according to the languages they speak. Or politically, according to their economic adherences. Or religiously, according to their theological beliefs. You can divide them into male and female, or the old and the young, or the rich and the poor, or the ignorant and the educated. The methods of classification are very great in number, very great!" He slowed his voice in emphasis. "But there is one method of classification which is the least employed yet is the most significant of all—in fact it is of supreme importance to the whole of mankind."

"Go on," Armstrong encouraged.

"Every Terrestrial is either a Hu-man or a Nor-man!" He studied his listener speculatively. "That is to say, he is either mad or not-mad; he is either insane or demonstrably sane!"

Shifting uncomfortably in his seat, Armstrong observed, "I'm saying nothing. I'm leaving this to you."

"The sane are few in number," Lindle went on. His voice now had a peculiar quality, somber and ponderous, as if he were trying to imitate a recording angel reluctantly reading the scrolls of fate. "The insane are many—in fact they represent the huge majority of the people upon this unfortunate world

In considering this, do not be deceived by relative appearances; some are less insane than others, so much so that they may appear sane by comparison. It follows therefore that nobody upon this world can be declared sane unless actually found so under test, according to a definite and positive standard."

"Which standard you, in your supreme ingenuity, have devised," suggested Armstrong sarcastically. "The loonies define the loonies!"

"Now, now!" Lindle reproved. "We agreed to suppress antagonism, didn't we?" He gazed quietly at the other, then continued, "I did not devise it. Neither did any living man. It was not devised by anyone of this earth."

"They invented it on Mars, I suppose?" guessed Armstrong jocularly.

"Correct!"

Armstrong emitted an involuntary yelp of, "What?" then bit his lip and lapsed into silence.

"I warned you. I told you that you're going to get more than you'd bargained for!" Lindle's finely cut features grew reminiscent. "It was designed on Mars by our own forefathers one hundred and twenty thousand years ago. It is called the psychotron. It is the only means by which sanity can be determined beyond dispute."

"You say our forefathers invented it. Are you trying to tell me that we came here from Mars sometime way back before recorded history?"

"Not all of us. Only the white-skinned ones. By direct descent the whites are Martians, all of them, whether they know it or not, whether they like it or not. The yellow-skinned peoples are the only true Terrestrials—they have been here all the time. In a way, we are their guests very much as some broad-minded Americans consider themselves guests of the Red Indians. The brown-skinned peoples are Venusians. The black-skinned are Mercurians. Every Negro is a Mercurian, in his own right, by direct descent."

"Sounds to me as if you're out to start a new religion," Armstrong commented skeptically. "Where did you get all this stuff—did you read it in a crystal? Or did someone pass you some sacred tablets?"

"One does not have to start anything already so ancient that Terrestrial history contains no record of it!" He made the retort in manner confident and assured. There was nothing about him to suggest the cultist, the fanatic, the crazy advocate of a crazy creed, the phony harbinger of a phonier destiny. He spoke as certainly and as matter-of-factly as if he were saying that roses are red and violets blue. "These things I am telling you are facts of extra-Terrestrial history the records of which are far older and infinitely more accurate than the footling legends of this world. They are facts fixed and unalterable—and they can be reasserted anytime."

"Oh?" Armstrong took him up on that. "How?"

"In many ways. For instance, I

can show you three-dimensional records of actual events, including the first Martian explorations of Terra and Luna. I can let you play with the psychotron until you've satisfied yourself that it resembles nothing existing in this world. However, the most spectacular and indisputable proof will come when the first Terrestrials land on Mars—if they ever get there—and if we fail to prevent them!"

"Ah!" Armstrong rested broad hands on broader knees and looked belligerent. "So you admit that you're involved in systematic sabotage of rocket-shots?"

"Admit it? My dear man, we boast of it!"

"That," defined Armstrong, "is an almost perfect example of sticking out one's neck. Will you still boast of it when the F.B.I. toss your pants in the clink?"

Lindle's chuckle was one of amused tolerance. "There speaks the would-be Terrestrial -and one hundred per cent American at that!"

"Maybe. But I like being an American. I'm sane, see? You said so yourself. I'm sane enough to enjoy retaining some remnants of self-respect. I don't go round peddling my loyalties to the highest bidder."

"Naughty, naughty!" laughed Lindle. He wagged a corrective finger. "No animosity—remember? The whole purpose of this conversation is to enable you to decide where your loyalty really lies after you've heard the whole. As an intelligent individual, and something of a scientist to boot, you wouldn't base a decision on insufficient facts, would you?"

"No, I guess I wouldn't. Let's have the rest of the gabble. I'll listen—but don't take it for granted that I'm believing it!"

"I'll give you as briefly as possible a sketch of history unknown to most of the peoples of this world. It is unknown because it has been kept from them for reasons which will become obvious, though a few distorted smatterings of it, and some vague suggestions of it are the prized secrets of certain esoteric circles such as the Freemasons and the Rosicrucians. The facts I am about to give you are the truths which must not be mentioned, the pearls that are not to be cast before ordinary, nondescript people. They are for the few—*the sane!*"

"I'm listening."

Lindle said, "You will have to do more than listen. You must also think. Afterward, you must remember. And, remembering, you must observe the daily features of this world through new and enlightened eyes." He watched the other keenly, then started his story.

"More than one hundred and twenty thousand years ago the white-skinned and highly advanced peoples of Mars conquered space and sent their rocketships to the Inner Planets of this solar system. They found all of them inhabited by beings superior to the animals, beings of their own shape and form though not of their precise lineaments or color. Incidentally, the

Martians evolved an interesting solar-potency theory to account for this similarity of shape, but I won't go into that here. Let it suffice that all superior forms of life on the four worlds nearest to Sol proved to be bipeds resembling yourself. The inhabitants of Mercury were black-skinned, those of Venus were brown, those of Terra were yellow. There is a very simple explanation of these color-gradations, the depth of coloration being in direct relationship to the intensity of photon-bombardment from the Sun. The Martians therefore were white because they *had* to be white."

"I'll give you that much," acknowledged Armstrong. "It could be—if it were true."

"Now we come to the point where planetary fertility influenced the course of history," continued Lindle, ignoring the interruption. "All planets were fertile, as is obvious from what I have said, but none were so amazingly lush as Terra. To its own misfortune, Terra was torn and racked with restless, dynamic life, a sphere in torment of labor pains. Thus the Martians found the Mercurians and Venusians only little less advanced than themselves, so little that either of them would have conquered space within the next ten centuries had not the White Ones of Mars beaten them to it—but the yellow peoples of Terra were very primitive, mere aborigines with time to concentrate on nothing but the awful struggle for survival against the monstrous life-forms which spawned in multitudes all about them. Their potential for advancement and ultimate greatness was no less than that of peoples on neighboring planets, but they had far tougher obstacles to overcome, their hold on life was more precarious, and their progress naturally was very slow. Terra was the most violent, most backward and least desirable of the four planets solely because it swarmed with fierce, vibrant, brutally competitive life. None of the inhabitants of the other three planets had been compelled to beat down so much opposition, and thus their progress had been rapid by comparison; the Martians most rapid of all. The yellow people, the Terrestrials, had a stiffer uphill climb. The bounding fertility of their world, in some ways a blessing, was also a curse."

"So?" Armstrong prompted unnecessarily.

"So under the tremendous impetus of Martian space-conquest and the resulting contact of cultures, Mercury, Venus and Mars grew spiritually close to each other and progressed in friendship and peace—while Terra, the world of jungle and swamp, of stings and poisons and ravening carnivores, was ignored, neglected. Terra was not ready for trans-spatial communion. Terra was too young and too bloody to join the Solarian Brotherhood. Though their potentialities were recognized, and their equally great destiny taken for granted, Terra's small number of yellow men were then regarded as little better than the apes."

"Against which is the fact that our oldest known form of civilization happens to be Chinese," put in Armstrong, shrewdly.

"Quite true," Lindle admitted. "It's a fact which will be found to support my story by the time I'm through! You'd better bear that item in mind." He studied his listener for effect before he went on. "Thus, for a long, long time Terra was neglected much as America was disregarded between the times of its discovery by Eric the Red and its rediscovery by Columbus. Meanwhile, the peoples of the other three planets grew nigh to gods, and only one feature denied them perfection—they had within them the seed of their own destruction, a malignant strain which repeatedly had tried to convert their peace into futile wars. It was an inherent strain of mental imperfection which continued to breed and which there was no sure way of identifying. Lack of means of identification was due mostly to lack of inducement to seek a means, and that in turn was due to realization that a solution to the problem would be worthless unless they could also solve the still greater problem of eradication. There was no point in separating the sheep from the goats unless they could first decide what to do with the goats. Nobody knew what to do with the imperfect ones after they'd been sorted out. There was no question of killing them off, or of removing them from existence in any imaginable way, for a people become almost godlike—by virtue of that are generous and merciful. All that was needed to bring true perfection to the near-perfect races of the three planets was some nonlethal method of ridding themselves forever of impurities. And, for a long time, for many, many centuries, the wisest of them could not find a solution."

Pausing, Lindle leaned over his desk, offered Armstrong a cigarette. Accepting one, the latter remarked: "Even the angels resort to drugs, eh?" Grinning, he stuck the tube between his lips, felt for his lighter, absently sucking at the tube as he did so. The cigarette's end suddenly glowed without any flame being applied, and what flowed into his lungs was not tobacco but a vapor more aromatic, more soothing.

"Even the angels love solace!" cracked Lindle. "However, to continue, the time came when the solution arrived. Every problem has its secret hidden in infinity. This one came when Prahada, a Martian cerelectronics specialist, perfected the psychotron. It was an absolute solution. Beyond all manner of doubt, it distinguished the mentally rational from the irrational. It could do nothing to remove the cause which is hidden in the make-up of the individual blood stream, but it could and did identify the mental effect. Its analysis was solely a mental one; it ignored physical imperfections which are not and never were of racial significance. The mentally faulty were the ones withholding near-godlike status

from the biped trinity, and at last they could be identified."

"Nice for them!" commented Armstrong.

"Soon after publication of the news of the psychotron a Venusian philosopher completed the solution of the problem by producing a plan which fitted in perfectly with the triune's code of ethics, a non-lethal scheme, fair, merciful, and so designed as to admit the right of the imperfect to their own destiny. In brief, he proposed that the mentally unfit be sorted out and dumped on Terra."

Armstrong dropped his cigarette, snatched it up from the carpet. The fingers with which he held it trembled ever so slightly although he exerted all his will power to control them. His mind, already kicked around too much for his liking, seemed to have split itself in two and was speaking to him with contradictory voices, one of which said: "Hey-ho, what a liar is Lindle! The crankiest of cranks! The nuttiest of nuts! Listen how he hands you the good old phonus bolonus!" The other voice droned with damnable persistence, "This is what you've suspected all along but have refused to admit even to yourself! You've known all the time that humanity as a whole is not rational but you have never found the courage to face the fact. You've lacked confidence in your own judgment because all around you lunacy is the norm!" Determinedly thrusting both suggestions aside, he concentrated on absorbing the hawklike man's astounding version of ancient history.

"In effect, what he proposed was the mightiest purge known to the history of this solar system—and maybe the mightiest in this neck of the galaxy. Strangely enough, the plan was little different from that of Terra's later and inadequate history when, for example, the British followed their explorations of Australia by turning it into a penal colony to which they exported their criminals and various kinds of trouble-makers. France did the same with Guiana. Terra was conceived as a sort of cosmic Australia, and the plan won much favor. Let us, argued the Mercurians, Venusians and Martians, let us rid ourselves of every Hu-man without denying him the right to life. Let Nature be the judge of whether the mentally defective may or may not survive. So they did it. They paid the price in work, materials and tears, and it took them six hundred years to shift the lot—but they did it!"

"You make Hitler look a piker," Armstrong contributed.

Undeterred, Lindle went on, his eyes reflective. "At great length, with complete thoroughness, all three planets sorted out and rid themselves of every mental defective regardless of age or sex, regardless of the degree of imperfection, and regardless of pleas or prayers. It was a case of having to be hard to the minority in order to be just to the majority. It was far better than euthanasia, and more

soothing to the conscience." His gaze fixed again on his listener. "Thus Terra became populated by the outcasts of the Mercurian blacks, the Venusian browns and the Martian whites plus, of course, its native yellow races who, being unpurged, alone were neither wholly insane nor wholly sane. It is still a matter for debate whether this purge was just to these yellow races, the only true Terrestrials. Maybe it was a dirty trick, or maybe it was greatly to their benefit—which, only time will show. But the fact which you have mentioned and which I asked you to remember, namely, that the Chinese built the first Earthly civilization, was no mere accident, for they alone of Terra's motley mobs had sane influences to counterbalance their insane ones. All other peoples, by the decision of the psychotron, were wholly or partly mad—and most of them still are!"

"Anyone dopey enough to swallow all this would have some cause for suicide," Armstrong suggested. "Even loonies don't like being reminded that they're incurably nuts."

"The point is well-put but quite wrong," Lindle contradicted. "As I have told you, these fundamental truths are known to very few—and ignorance is bliss. Secondly, the tremendous stretch of history over these scores of centuries has given birth to a fact of great significance, a fact which gives cause for optimism and may be regarded as justification for the purge—the fact that sanity is the dominant strain."

"Eh?"

"Sanity is the dominant," Lindle persisted. "As time rolls on and generation succeeds generation, so do mental flaws gradually weaken and die out until, some day, sanity becomes ascendant. The hordes of the mentally-flawed are not on a path different from that of their forebears. They're on the same path, and merely lagging behind. Some day they'll catch up!" He watched the other for effect before he went on, "The great misfortune of the present time is that they're catching up scientifically—and especially astronautically—far faster than they're progressing psychologically. They now threaten to invade the resting places of the gods' long before they've attained their own godhood. They are developing the brains of the Norman while still retaining the mind of the Hu-man. They insist on running a race for a prize which is not theirs to grasp—or not yet. Unless by one means or another we can delay space-conquest by Terrestrials, the Martians, Venusians and Mercurians are going to have their original problem dumped right back in their laps."

"Won't it be a shame!" said Armstrong.

"Will it?" Lindle's query was sharp and pointed. "Think again. You regard yourself firstly as an American, secondly as a Terrestrial, because you've been conditioned that way exactly as once you were conditioned to believe in Santa Claus and the Easter Rabbit. But you are white and sane and by

definition are a Martian! With whom does your true loyalty lie?"

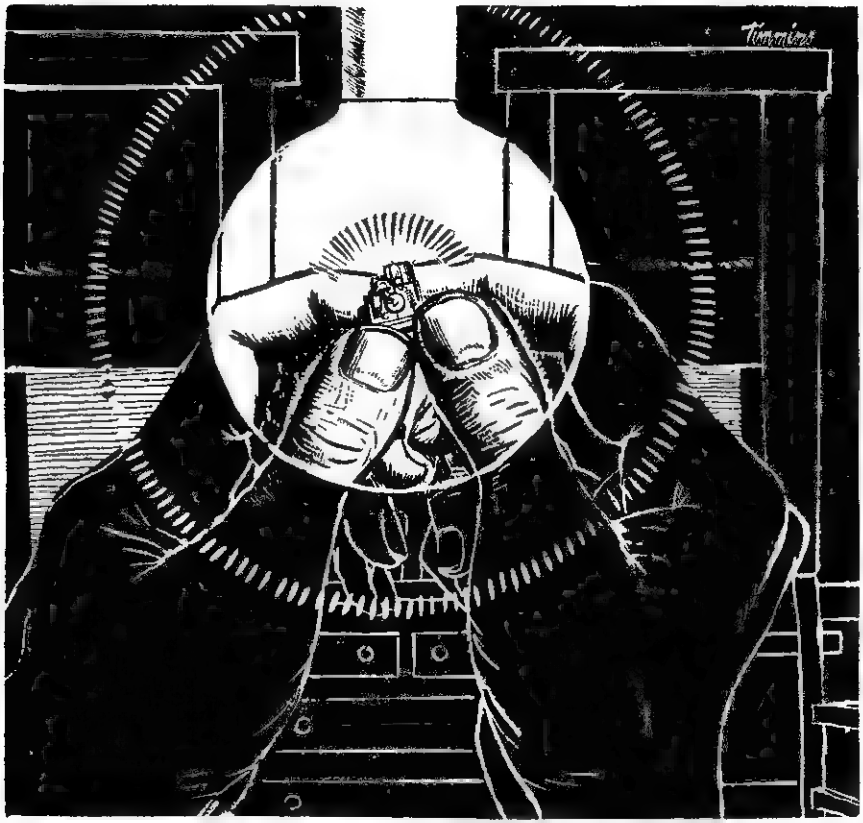
Armstrong snapped back: "That's an easy one. What has Mars ever done for me that I should owe it anything?"

"Plenty! In the first place, Mars granted you life when just as easily you could have been denied your very existence. You live because your ancestors were exported instead of slaughtered. Had they been purged as some of Earth's maniacs might have purged them, you would never have been born!"

"But—"

"And secondly," Lindle pressed on, "by their occasional and well-disguised interventions in this world's affairs, the Martians have done their best to encourage the swifter growth of sanity on this planet. That means that you are living in a world not quite so outrageously insane as otherwise it might have been."

"Interventions?" Armstrong's look was quizzical. "What do you mean by interventions? I thought



you said they'd dumped us and deserted us?"

"They held a purge, but they did not wash their hands of us entirely. There was never any ban on infrequent visits to the asylum by high-minded persons interested in its progress. Some of them came and did their best. Super-missionaries! Many of them are still remembered even today—the North Venusian Gautama Buda, for instance. They call him Buddha! In their peculiar day and circumstances their teachings moved mountains in spite of the fact that they've been greatly distorted and were never more than half-understood. Today, their origins are wrapped in mystery so far as the common herd is concerned, and their minor demonstrations of superior science are still spoken of as mighty miracles. On a pillar of fire they came, and in fiery chariots they ascended into heaven!"

"You mean—?"

Lindle nodded. "Almost every great one of whom you can think. Excepting Confucius—his was the natural wisdom of the native Terrestrial, unpurged and sane. But almost all the others . . . almost all." His voice trailed off, he was silent awhile. "There are no such things as miracles, as many Earthly scientists know since many of them are sane. When Isis conversed with the speaking Memnon that great statue no more than sounded its resonant note whenever Isis struck the proper chord. When Mohammed moved the Khaaba Stone he teleportated it as easily as zonal fruits are teleportated across the red deserts. But neither demonstrations of superior science nor simple tutoring in ethics could restore sanity to the witless; indeed, upon these things they built insane cults which added to their insane rivalries and created further antagonisms between them which have lasted to the present time. So those ceased some sixteen or seventeen centuries ago, and other, more secretive, more effective forms took their place. Now, in this critical time, the Martians, Venusians and Mercurians find themselves at the point where they're more concerned with protecting themselves from the consequences of Terra's scientific progress than assisting the Terrestrials psychologically and sociologically."

"Most interesting," conceded Armstrong. He leaned back, stretched his long legs out. "As a story it has all the power and vitality of Goldilocks and the Three Bears." Drawing the legs in, he stood up. "Myself, I could have improved on it. I'd have put a sting in the tale by declaiming dramatically, 'Behold! *I* am a Martian!'"

"Which I am," Lindle retorted. "As also are you! By birth I am a Terrestrial. In sentiment and loyalty I am a Martian. I don't expect you to look at it the same way just yet, but I've planted the seed in your mind and sooner or later it will bear fruit. Whether you like it or not, you're going to find that you can't stick stubbornly to Earth-inspired prejudices and

cock a snoot at the most advanced peoples in the system. You, along with the rest of the sane, are a guardian in the nut-hatch and it's your duty to stop the craftiest and most determined of the inmates from climbing over the wall."

"My duty? Who says so?"

"Not me! Not anybody! You're going to say it yourself if, subconsciously, you've not done so already. You can't help being sane because you *are* sane!" He arose from his chair, his height as great as the other's. He looked more like a prosperous defense attorney than a prominent politician. "You are free to go, Mr. Armstrong."

"Pretty sure of yourself, aren't you? Unwarranted interference with the liberty of the subject is an indictable offense, if I remember my law. How do you know I won't make plenty of trouble for you when I go out?"

Walking to the door, Lindle held it open invitingly. "My very words. I said precisely the same the moment they released *me*. So did a hundred others. They all come back after due thought. We gain strength because they seek us out, they gravitate to us of their own accord. There's a reason for that, too, though you wouldn't understand it. You might call it birds of a feather flocking together, or similar hunches of similar personalities, or psycho-gravitation. The Outsiders of other worlds call it telesympathy."

"I call it herd instinct," said Armstrong sourly. "And I'm a rogue elephant!"

Lindle grinned. "A characteristic of the same is that they can't help thinking. They actually enjoy it and it causes them no pain. They think and think and think with a perspicacity and a determined insistence from which hardly anything can divert them. Eventually they think themselves right into membership of the Norman Club. Like clings to like—and I'll be seeing you again." He waved an inviting hand toward the doorway. "So here is the liberty we're granting you, Mr. Armstrong—the freedom to walk right back into the cosmic looney-can!" A strange gleam sparkled in his eyes. "See how you like the madhouse *now*!"

Armstrong studied him doubtfully and with a touch of irritation. His strong teeth gnawed at his lower lip while his emotions urged him to say something which his cooler mind found difficulty in putting into words.

Finally, he murmured: "All right. This is where I go build up my muscles. Next time we meet it'll be on different territory." He eyed the other forbiddingly. "Watch out!"

With that, he departed.

IX.

Miriam was lounging lackadaisically at her typewriter when he bashed the door open and barged straight through her room with no more than a surly grunt of acknowledgment. Treating Hansen's door in the same way, making its glass panel shudder in its frame,

he entered like an invading rhinoceros, slammed the door behind him, sat down and fixed the saturnine agent with baleful gaze.

"Fine escort you turned out to be!"

Hansen's left eyebrow rose a fraction, he felt in a drawer of his desk, extracted a paper, tossed it across without remark. Armstrong picked it up, scanned it.

It said: "This is a boy scout joint. I won't need you on so soft a job. You're wasting your time. Beat it—I'll phone you when I want you again. John J. Armstrong."

"Your signature," said Hansen emphatically. "I even double-checked. I got Sid on it, at police headquarters. He said it was your writing and your signature."

"When and where did you get it?"

"An hour after you entered that dump. I was in the snackery across the road, fourth table on the left counting from the door, exactly where you told me to be. That rear-admiral guarding the Norman Club came straight across the road, straight to my table, handed me the envelope and said: 'Message from Mr. Armstrong.'"

"I don't know a thing about it." He threw the note back with unconcealed disgust.

"When I'd read it," continued Hansen, "I compared it with a signature of yours which I was carrying in my wallet. It looked genuine. So I took it to Sid. He said it was genuine. I'm not so dopey that I'd fall for a gag, but this isn't a gag—*you* wrote that note!" He made a gesture of defeat. "It left me with no choice but to pack up and scram."

"Nevertheless, I didn't write it."

Hansen permitted himself a deep, heartfelt sigh. "Then the age of miracles has not passed." He poked the offending missive away from him. "I suggest you take it and drag it around the banks. After the fiftieth paying teller has compared it and told you it's genuine, you'll have to believe in miracles."

Picking it up again, Armstrong folded the note, put it in his pocket. "I'll look it over myself. If it definitely is mine, then I must have written it at their dictation, while unconscious — somehow, I don't know how."

"Oh, so you were unconscious?"

"I went right in and they gave me the business and I flopped on the floor, all within a few minutes. I got dumped like a sack of goobers while you squatted on your hump and listened to the bleeper bleeping. They discovered that, too. Only you and I knew of it, and I didn't tell them." He bent forward, hands on knees. *"Did you?"*

"Of course I did! You bet I did! I do things like that. I burn all my checks, and I spit in clients' faces and spend most of my time thinking up ways to bankrupt the biz." His voice became sharp. "If you can write letters in your sleep, you can answer questions in your sleep."

"Questions!" Armstrong emitted a groan. "I've answered a million of 'em."

"See!"

"Maybe I did talk too much. I don't know what I said or what I wrote or what I did, nor how they persuaded me to do it." He glanced around. "Where is the bleeper?"

"In the safe. Miriam will give it to you when you go. That dingbat continued to squeak for four hours after I returned here. Every time I gave it a whirl it indicated a different direction. It jiggled all over the shop, but ended up pointing across the river to New Jersey. Then it cut off."

"Yeah, I found myself on the other side of Jersey City when they let me go."

Hansen studied him. "You've been gone four days and you look as if they gave you the willies among other things."

"They did." He brooded solemnly awhile. "I suspected it wouldn't be easy to slam back at that smooth mob, but just for the ducks of it I went to the cops immediately I could steer my feet where I wanted. What they told me was much as I'd expected. My prison is an address known to them as a clinic for neurotics run as a charitable interest by the Norman Club. All they know of the Club is that its members include some influential people. At various times, about twenty nervous wrecks have bothered them with complaints of illegal detention at the clinic. Sixteen thought a second time and subsided. Four got tough, pressed charges, went to great expense, and lost their cases. Too many eminent lawyers and too many eminent witnesses made nonsense of their evidence. Besides, they gabbled wildly about gallivanting Martians, and any court knows that a guy who drags in Martians isn't a reliable witness."

"Martians?" Hansen's eyebrow crawled up again.

"Sure!" Armstrong regarded him with malicious satisfaction. "You're a Martian and I'm a Martian and Miriam's a Martian too—or a Martianess. You aren't of this world unless you've got a name like Ah Koo. The Norman Club can prove it."

"Nuts!" said Hansen succinctly. Then he added: "How can they prove it? Anyone who can prove that can prove anything—which makes the whole world crazier than a coot."

"That's precisely the point. It is crazy. Almost everyone's crazy but me."

A hint of expression crept into Hansen's immobile features, a faint touch of alarm. Bending down, he felt at random under his desk, brought up a bottle of bourbon, offered it to the other. "Here you are. Take a good, long suck at it—it'll make you feel better."

"I'd be as daffy as everyone else if I refused." Tilting the bottle, Armstrong gargled heartily, said, "Ah!" and gargled again. Then he polished the neck, handed the bottle back. "Knowing that I'm *compos mentis*, I'm faced with a hundred problems resulting therefrom. The most immediate one is to determine just how nutty *you* are."

"Me?" Hansen was both sur-

prised and pained. Snatching at the bottle, he took a long and noisy swig. "The only times I get the heebies is when I'm driven into them by slap-happy clients."

Ignoring the point, Armstrong offered generously: "Of course, there is a slight chance that you're sane. It would be nice if you were. If two of us have enough sense to pull up our socks, we'll be company for each other amid all these imbeciles." He waved a hand to indicate the world at large.

"What did they do to you?" inquired Hansen, anxiously. "Did they pour beer over your naked brain?"

"I'll tell you. No kidding this time—here's what happened."

He gave Hansen the lot. It took him an hour of steady talking. By the time he finished, the agent's face expressed a curious mixture of emotions.

"And that's the lot," Armstrong concluded. "According to them, this is a world of native Terrestrials plus the descendants of outcast Martians, Venusians and Mercurians, and practically none of them know it. Most of them still are crazy to varying degrees, and they don't know that either."

"Do you believe all this twaddle?" Hansen burst out.

"I don't accept it. I don't reject it. It's too ego-deflating to believe; too plausible to disbelieve."

"But, man, what would it do to this planet if its inhabitants suddenly discovered that they were just so many chronic psychopaths locked in a cosmic foo-house? Heck, they'd go really nuts!"

"The really nutty can hardly go more really nutty," Armstrong observed, cynically. "Besides, you forget that sanity is the dominant strain. Insanity can't last because it's a characteristic congenitally weak—it's doomed to die out, though very gradually. This world can't help but become completely sane in time, by which time the other planets will be ready to welcome us like long-lost brothers. But we're not ready yet."

"Bilge!" snapped Hansen. "Bunk! Piffle! Balderdash! A dollop of pseudo-historical hooey!"

"Maybe—or maybe not. You miss the point, though. The point is that I've discovered two things I've been anxious to learn."

"Such as what?"

"First, that rocket-shots *are* being sabotaged by various methods yet to be found. Second, that the sabotage is being organized by Norman Club members of all sorts of nationalities, members who, rightly or wrongly, insist upon regarding themselves as Russo-Martians, or Anglo-Martians, or Franco-Martians or what have you. They consider themselves Martians or Venusians or Mercurians first, and British or Russian or Portuguese last." He pondered a moment, his eyes abstract. "Doubtless if a rocket were to be built in India it would ultimately be wrecked by Indo-Venusians. An African one would be dealt with by Afro-Mercurians. We're up against a powerful and ruthless organization of

world-wide scope and of other-worldly loyalties. That their faith may be founded on a mass of gibberish makes no difference to the effect with which we have to deal—somehow. The Koran may have no foundation in fact, but that doesn't rid this planet of its millions of faithful Moslems. The belief, the faith, the loyalty are all that matter."

"I know, I know," admitted Hansen, glumly.

"So we're confronted by a supreme illogic which denies that truth is that which is demonstrably true and asserts that truth is that which is believed with great fervor. What is worse, the illogic justifies itself quite logically insofar as its acceptance proves its own premise—that the world is mostly crazy." He studied the bourbon bottle morbidly as he went on, "So the illogic says that if fifty million people believe in Rumpusbumpus, firmly, fanatically, even unto death, then Rumpusbumpus *is!* It's only in an asylum where they'll accept as self-evident that fifty million Frenchmen can't be wrong—therefore the illogic is established and justified. Looney laws for looney people!"

"I'll be drunk before this night is out," Hansen said.

"Therefore the question of whether these Norman Club fanatics are right or wrong is of no moment whatsoever. What is of moment is the effect their beliefs have on them, the things it's making them do. What is of equal or greater importance is the problem of what *we* can do to upset their game."

"Why should we bother?" Grabbing the bottle, Hansen took a long gulp. He put the bottle down, gasped, said: *"Whew!"* gasped again and wiped his mouth. "If some crackpots want to blast into space and other crackpots want to prevent them, why not leave them to fight it out between themselves? If anyone ever does get to the Moon it won't earn me a bad dime."

"It's the bourbon talking." Armstrong looked at him severely. "You're not used to it. You forget that I'm on the side of the Moon-boys and that I'm paying you cash for helping me limp along."

"Yesh," Hansen admitted. He was faintly surprised as his tongue skidded. "Yesh . . . I mean *yes* . . . sure! Anything you say!"

"Then leave that bottle alone and pay attention. This episode at the Norman Club got me somewhere in one huge jump. But I'm dissatisfied. The jump was so big that I skipped right over stones I don't like leaving unturned."

"Meaning the deaths of Mandle and Marshall?"

"Those, and other things as well, such as who searched my flat and lab—and why. Who's Sandy-hair, for instance? Where's he got to now? What was he seeking?"

Carefully, Hansen put both hands on the desk and stood up, his features taut, his eyes narrowed. Watching him, Armstrong planted big feet squarely on the carpet and braced himself.

Behind him a quiet, silken voice said: "A back-somersault will do you no good at all, Mr. Armstrong.

Please relax. And you, Mr. Hansen, kindly be seated."

Came the sharp click of a closing door and three men entered Armstrong's field of vision as slowly he twisted his head around. He recognized all of them. The first was Sandy-hair. The second was the gaunt-featured individual who'd frisked his laboratory. The third was one of the pair of bogus F.B.I. operators.

Sandy-hair and Gaunt-face both held strange, torchlike objects identical with the thing revealed by the secret camera. The third man kept his hands in his pockets.

Strolling easily across the room, Sandy-hair hitched one leg over a corner of Hansen's desk, sat with his back half-turned to the agent, spoke smoothly to Armstrong. "I trust that you will attempt nothing foolish or precipitate, though I don't think you're likely to, seeing that you're said to be sane."

"You've got the drop if that gadget of yours is lethal," Armstrong answered. "So it's all your talk."

"I have been most interested in your visit to the Norman Club," Sandy-hair continued. "The way in which your deductions led you there does you great credit."

"Thanks. You don't know how much you hearten me."

"Some credit is also due to Mr. Hansen for his able support."

"Nuts to you!" rasped Hansen. "What have you done to Miriam?"

"She is perfectly all right. She's got company. No harm will come to her I assure you." His pale blue eyes held a cold light as he continued to watch Armstrong with steady, unwinking gaze. "It was very nice to learn of your sanity, but what pleases us more, far more, is your refusal to be influenced by the facts of which you've been informed, and your determination to continue to meddle in opposition to the Norman Club. Such a reaction is unusual and most gratifying."

"If you know so much already, you must have a mike planted here."

"There is one under Mr. Hansen's calendar. It is unfortunate that he should be involved in this way, but it's not his fault at all—he did not suspect that it was there. Of course, we had your apartment and your laboratory similarly fixed up, since there was no way of telling in which of these places you would choose to reveal what's on your mind."

"Very thorough of you."

"We have a habit of being thorough."

"We?"

"I shall not rise to the bait, Mr. Armstrong. Consider that I refer to my comrades and myself and let it go at that." His thin mouth betrayed mild amusement while his eyes remained cold and expressionless. "But we're not here to swap testimonials. We're here because we like your attitude toward rocket experiments, knowing what you now know. Despite all you've learned, despite the contrary opinions of the Norman Club, despite any extent to which you secretly credit their assertations, you are

still in favor of space-conquest as quickly as possible?"

"I am."

"Why?"

"Mind your own business," invited Armstrong.

"Essentially this is our business and we intend to mind it. We, too, want space-conquest as soon as can be."

"By whom?" He surveyed the other shrewdly. "By Americans or Russians or Eskimos or whom?"

"By Terrestrials. Any Terrestrials at all will do—their nationality is of no importance."

"That's broadminded of you. I could like you a lot if you'd had a bath this year. You're an anarchist, I presume?"

Sandy-hair remained calm and cold, refusing to be baited. "I am not interested in any of Earth's religious or political isms. I am a native-born Martian."

Behind him, Hansen muttered, "Eek-eek! Off we go again!" As Sandy-hair half-turned to study him with snake-eyes, Hansen added, "I might as well be in the fashion. Know who I am? The Wizard of Oz!"

"Very witty," pronounced Sandy hair in tones like splintering ice. He swung back, returned his attention to Armstrong.

Armstrong said: "You've got bingles in the shingles. You're crazy."

"Most certainly I am. That's why we're here. The psychotron pronounced us crazy, all of us. That's why we're stuck with this lousy planet. That's why we want to bust out!" He bent forward.

A hint of eagerness warmed his pale optics. "Once the floodgates are opened there will be no question of a mere mass of apparatus arbitrarily deciding who lives where."

"That's a cockeyed story. It's phony on several counts. First, the great purge was supposed to have been completed umpteen years ago, and therefore—"

"It was completed," Sandy-hair interrupted, "but rare cases kept on popping up every now and again within succeeding generations and they all got tossed out as soon as found. You've had them here time and time again Princess Cariboo —Kaspar Hauser —The Man Without A Name—dozens of them!"

"Second," pursued Armstrong, disregarding him, "no guy, not even an idiot, would boast of his idiocy without an ulterior motive. Where's your motive?"

"What's your guess?"

"My guess is that you're trying to kid me that space-conquest will further the insane aims of demonstrated imbeciles—and thereby turn me against it. The way the Norman Club wants me to go! My guess is that you're just another drummer for the Norman Club out to get at me from a different angle. The only thing I can't understand is why the heck you and they consider me of such all-fired importance."

"Your assumptions are completely haywire. We'd rather see the whole Norman organization blown sky-high than be made Indian

rajahs. Your importance lies in the data you've been digging up, some of which affects us personally." Slowly he swung his foot to and fro, bumping his heel against the desk. His torchlike weapon remained leveled and steady. "I can't make you believe what you're determined not to believe. If, in refusing to credit basic facts, you also refuse to surrender what we want"—he gestured with the torch, and ended—"we'll get it any way we can."

"You're not telecasting a whodunit," Armstrong reminded him. "Get what?"

"The data."

"What data?"

"Don't act dumb!" swore Sandy-hair. "You know that we want the data on rockets nineteen and twenty."

"Oh!" said Armstrong, refusing to let his face betray his surprise. "Oh, that! As a matter of fact, I've buried it."

"Where?"

"Under the Statue of Liberty."

"That is not amusing." Sandy-hair put his feet on the floor and stretched himself to full height. Coming out of their state of semi-relaxation, his two companions stiffened into alertness. "We're fed up sparring with a mule like you. We're going to give you exactly one minute—"

A sudden uproar in the outer office drowned his voice completely. A door crashed open, there was a rush of heavy feet, a high-pitched squeal from Miriam, and four shots in rapid succession. The glass in Hansen's door splintered and flew in all directions as a big-caliber bullet came through and bedded in one leg of the desk. At the same moment, Armstrong's swiftly upswinging foot cracked Sandy-hair on the wrist and sent the menacing torch arcing to the carpet.

Not giving himself time to come erect, Armstrong remained in sitting position, lashed out a brawny arm and snatched Sandy-hair to him. The fellow found himself whisked irresistibly forward by power too great to oppose. Armstrong growled like an angry bear as he got him.

There came a sharp blast and a spurt of flame from the region of Hansen's middle, and Armstrong saw the agent's dark, intent eyes watching Gaunt-face bowing like a Japanese general. Two more explosions sounded from the doorway behind, but ignoring all these, and disregarding his victim's sinuous writhings, Armstrong rammed a ham-sized mitt in the small of Sandy-hair's back, planted the other over the victim's contorted face, pulled with the first and shoved with the second. Sandy-hair's head shot violently backward and gave out a sound like the snap of a rotten stick. The body dropped to the floor.

Breathing heavily, Armstrong stood up. He dusted his hands, looked down at the still twitching corpse.

"By hokey, I busted his neck! I pushed and I busted it. He was easier than a chicken." In mild

surprise, he stared around the room, noted that Hansen's face was still taut and that the agent had an automatic gripped in his right hand. Hansen's plump stooge Pete was peering in the doorway with a pair of uniformed cops gaping over his shoulders. Gaunt-face lay limp on the floor, and the third invader sat in one corner exhibiting a hole in lieu of his left eye.

Pete mourned, "Reckon we overdone it. These guys won't tell us anything now." Ambling into the room, he nudged Gaunt-face with his foot. "Deader than last week's bottles."

Slowly placing his automatic on his desk, Hansen looked at the pair of cops and signed to his phone. "There you are if you want to use it. Better phone the F.B.I. as well —they've got some sort of stake in that ginger-haired cadaver." His expression was one of tired resignation as he watched the cop grab the instrument. To his side-kick he added, "Nice work, Pete."

"Hey, what d'you mean, nice work?" demanded Armstrong, waking up. With a leery eye on the two cops, he slid a foot forward, edged Sandy-hair's torch out of sight under the desk. "Did you know he was going to barge in?"

"I didn't know he would—but I hoped he would."

"How come?"

"I've got my own routine, see? So when I received that lay-off note of yours I packed up and went, like I told you. But Pete took over. Then another guy relieved him. I've had that place watched right until you turned up here, and it's just as well I didn't mention it earlier. The watchers had orders to stick with you whenever you came out, to follow you wherever you went. They lost you when the bleeper quit bleeping."

"So?"

"So I was in the eatery," Pete took up, "when Miriam phoned to say you'd just turned up here. I left, came back here, hung around waiting to pick you up when you left. I saw those mugs go in, recognized that guy from Cypress Hills. That was enough for me—I called the cops and we busted in after them. That's all there was to it."

"That's all," echoed Armstrong. "A few bangs, and three cadavers, and we know all the answers—like heck we do! Oh, well, maybe we're mighty lucky." Mooching around, he knocked a basketful of papers from the desk, swore, bent down and scrabbled among them on the floor. He put them back tidily. The torch-thing slid safely into his pocket, unobserved by the cops, but noticed by Hansen who maintained his dead pan and tight lips.

Putting down the phone, the cop said: "They're on their way." Noticing Gaunt-face's torch lying at his feet, he picked it up, studied it curiously, said to Pete, "Is this the dingbat you warned us about? Doesn't look much to me. Just a hand-torch."

"Try it on yourself," Pete invited. "It'll give you the funniest feelings before you find yourself gripping your harp."

"Humph!" Skeptically, the cop

dumped it on the desk. Going over to the third body squatting in the corner, he frisked it, found another torch, placed it beside the first. Taking his cue from this, the other cop went to the outer room, returned a moment later with a third weapon. Jerking his thumb over his shoulder, he said: "Smack in the eyebrow. Nice shooting, though I says it myself. I was in form when I popped that one at him."

Hansen breathed heavily and bawled: "Miriam!"

"Nothing doing," Pete told him. "She grabbed her hat and went out as we went in. She was all hips and elbows and going fast. She was historical."

"Hysterical," Armstrong corrected.

"Historical," maintained Pete. He nodded toward Hansen. "She was saying things about his ancestors."

"She'll get over it," Hansen opined. "She'll be back in the morning. I pay her to work here, don't I?"

"Maybe she figures she ain't paid to die here," Pete offered.

"Neither am I!" Hansen snapped. He turned his attention to his client. "The rates go up with the risks."

"Natch!" Armstrong squatted on his heels and brooded over Sandy-hair's body. "Anything you say. I'm not broke yet!"

He looked closely at the corpse's features. In death they were calm and had lost much of their coldness of expression. The nose, he observed, was freckled and the skin had that fine, almost transparent texture characteristic of red-haired people. But there was nothing in any way remarkable about that face. Indeed, if the fellow had been a native-born Martian—as he had claimed to be—he had needed no disguise to conceal his other-worldly origin. His protection lay in his being so very ordinary. You could pick a dozen like him out of any Terrestrial crowd.

Was Sandy-hair's startling claim based on real, hard facts, or was it yet another piece of confusing twaddle such as had bedeviled this case all the way through? Lindle arbitrarily had divided the world into the sane and the insane, all of Terrestrial birth, and he'd made no mention of present-day Martians, either perfect or daffy. True, he had hinted at Martian interventions, vaguely, as if he didn't know much about them. It seemed that Sandy-hair's mob had the advantage there, for they knew plenty about Lindle and the Norman Club.

It was beginning to look as if this crazy sheep-and-the-goats theory was too simplified; the situation was more complicated than that notion would suggest. And the trouble was that the evidence led you to the same conclusion whichever way you looked at it. If all the data were correct, then this planet was a glorified madhouse. If it was incorrect, then it became a mass of gibberish so fantastic that only the nuttiest of people would find it convincing or try to convince others—and that, too, meant that there must be an awful lot of lunatics hanging around.

Another difficulty lay in ascertaining the degrees of whatever might be defined as lunacy. Those detained in Earthly madhouses maybe were so far gone in their insanity that their condition was obvious even to other, lesser lunatics who were swift to keep them out of sight. But here, right here in this room, was a form of imbecility not readily recognizable as such.

Lindle, who asserted categorically that he was sane, looked sane, only his superior pose and his obsession with so-called ancient history giving any hint to the contrary. Sandy-hair, who had another but confirmatory angle on the same crackpot story, had well-nigh boasted that he was insane—yet looked just as normal as Lindle or anyone else. Except for his touch of emaciation, Gaunt-face also looked normal. The third one in the corner was so normal that he might have been precisely what he'd once pretended to be, namely, an F.B.I. agent. Very ordinary and in no way peculiar were these three dead even though mentally damned by the evidence of their own mouths. Damned either way, whether their story be true or untrue—that was the hell of it. How then to distinguish the insane? Couldn't it be done without the psychotron? Come to that, could the psychotron really do it?

This Prahada, who was said to have invented the psychotron, had *he* been sane and, if so, how did he know it, how had he proved it? Had he employed his own invention to provide his own proof? If so, what real proof was that? One has to be sane to devise real proof of sanity. One has to prove sanity to be sane. Round and round and round—it was like running in circles. The old hen-and-egg problem in a new guise.

Suppose that Prahada's form of insanity had been peculiar, highly individualistic, totally different from the general forms of insanity of his fellows, might he not have mistaken it for sanity? In which case all that his psychotron could achieve would be to sort out the nuts like Prahada from the nuts not like Prahada, authoritatively defining the former as balanced and the latter as unbalanced now and for ever after. Thus everybody in Creation —Martians, Venusians and Mercurians included, purged or otherwise—might be as daft as they make 'em!

How do you know you're sane?

Armstrong uttered a hearty, "Double-damn!"

"Just how I feel," agreed Hansen. "Only I could do with some new words to express it." His gaze drifted toward the door. "Here comes the thud-and-blunder squad."

They poured in heavy-footed and eager; two plainclothesmen, a photographer, a medico, a fingerprint expert and the same police captain who'd investigated the death of Clark Marshall.

Seeing Armstrong, the captain exclaimed: "Oh-oh! Look who's here! You got a movie-reel of all this?"

"No, not this time."

"A pity." He glared around the

room. "Three stiffs in here and one outside. They would be defunct! How can we drag evidence out of defunct guys?" His shoulders jerked to indicate his helplessness. "Oh, well, we'll get on with the job. What happened?"

Carefully, Armstrong said: "I was here consulting my agent when this crowd busted in and demanded some information which I don't happen to possess. For no reason that I can imagine, they remained convinced that I'd got it and was being stubborn about giving. Pete, who was hanging around outside, saw them entering, recognized them as wanted and called those two police officers. They came in just as these three were about to get tough. There were some fireworks. It was all over in less than a minute. What was left was what you can see."

"It'll do for a preliminary yarn, though you've left nine-tenths of the details out. What sort of information did they want from you?"

"They demanded details of our latest rockets."

"Ah!" breathed the captain. "Then it's a hundred to one that these babies are foreigners. A heck of a time we're likely to have trying to identify them. It should be an F.B.I. job at that—reckon I'd better call them."

"They've been called. They're on their way."

"O.K. We'll go through the routine and leave them to deal with their part."

He presided morbidly until the F.B.I. men turned up ten minutes later. There were four of them. Three remained with the police. The fourth beckoned to Armstrong.

"I'm to take you to headquarters."

In short time they got there and Armstrong found himself faced by the same wide-featured official whom he had tried to cross-examine about Claire Mandle.

"So your friends are getting hard, Mr. Armstrong. What occurred?"

Armstrong explained it exactly as he had done to the police captain.

The other mused a moment, then asked: "Specifically, what did they want to know about rockets?"

"They demanded details of rockets numbers nineteen and twenty."

"As far as I know, nineteen is a French job hardly yet begun. Who will build twenty remains to be seen—maybe we shall, if eighteen proves another flop."

"The way you keep your face straight is magnificent," Armstrong told him.

"Meaning what?"

"Meaning you're telling me nothing."

The other was politely puzzled. "What do you expect me to tell you?"

"Oh, let it lie," growled Armstrong irritably. "I know the cold shoulder when I'm given it."

"You mystify me. I am at a loss to imagine what you think I'm withholding. If it comes to that, you're not so talkative yourself. You've not told me one quarter of what you know."

"Then it's tit for tat."

"Yes," the official conceded. "On

the face of it, it may be. But you don't appear to appreciate the difference in our respective positions. You, as a free citizen, not charged with any crime, are at liberty to reveal as much or as little as you like. On the other hand, I may tell you only that which is permitted by higher authority. Naturally, such permission would not be granted merely for the sake of satisfying your curiosity." He tapped a finger to emphasize his words. "But if you see fit to give us information which obviously you are holding back, we may be satisfied that your personal stake in this affair is of sufficient importance to justify taking you into our confidence."

"I'd like to think that over."

The other betrayed a touch of impatience. "This may be a matter of some urgency."

"Judging by the snaillike progress on rocket number eighteen, I'd say nothing's urgent in this cockeyed world."

"Don't be too sure!"

"The day's long past when I was sure of anything—including that the F.B.I. is precisely what it purports to be."

"Are you suggesting—?" began the other angrily.

"I'm suggesting nothing except that of late I've taken a fresh look at Mother Earth—and found that the old gray mare ain't what she used to be. The fact has made me muddle-minded. I have to concentrate more to get through my thinking. That's why I'd like time to think things over before deciding what to do for the best."

"But, man, this is not a problem requiring long and involved thought. It is an obvious duty. That gangs of foreigners should interfere in our rocket experiments is serious enough without American citizens being reluctant to recognize their duty, and—"

"Don't you tell me of my duty!" put in Armstrong, sharply. "Things have got to the state where it's up to every man to decide his duty for himself, and not have it defined for him by seeming patriots whose real loyalties may lie sixty million miles away."

"Sixty million miles away!" poohpoohed the official. "Idiotic!"

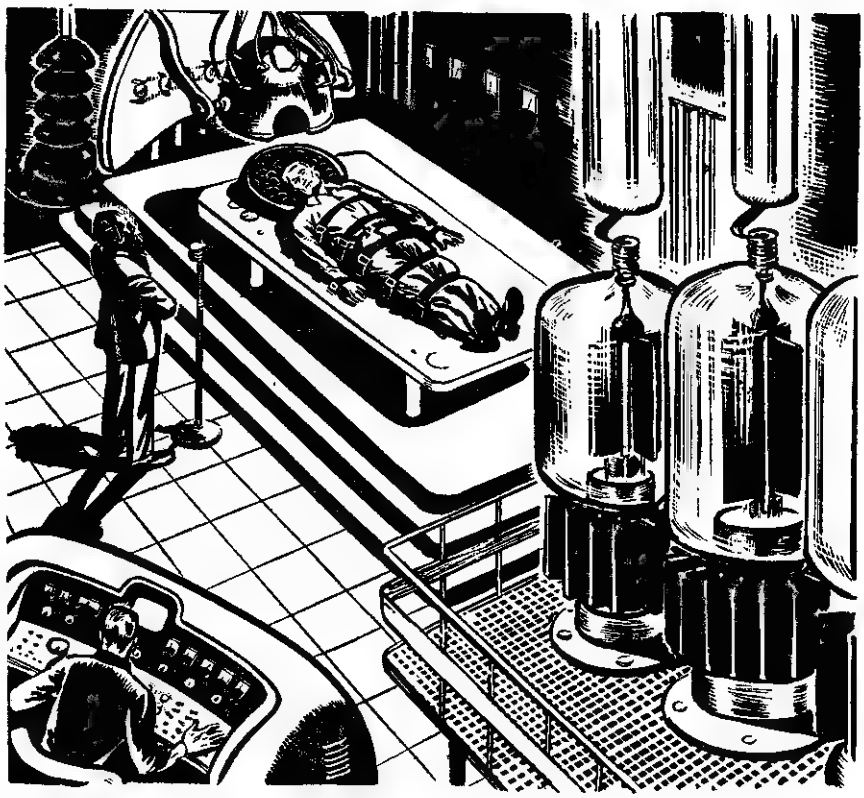
"Yes, idiotic," agreed Armstrong. "Like Hindus putting their sacred cows before their fellows. Like a stockbroker valuing his wallet above his own mother. Like—"

"Are you cracking at me?" The other's face was hard.

"I'm cracking at people like Senators Lindle and Womersley and a whole host of powerful and influential friends of theirs. Good, solid citizens who salute the flag and sing the national anthem—yet want nothing better than to see every American rocket blow itself apart."

"Is this an official accusation against Senators Lindle and Womersley?"

"Treat it any way you like," Armstrong stood up. "Dig deep and you'll strike pay-dirt—if some higher-up doesn't chip in with an order that you're not to dig!"



Compressing his lips, the other thumbed his desk-bell, said to the individual who responded, "Please show Mr. Armstrong out." His air was one of ireful speculation.

Smiling to himself, Armstrong turned, followed his escort through the door.

X.

Reaching his apartment, Armstrong cautiously locked himself in, gave the place the once-over. Knowing the microphone was there, it didn't take him long to find it though its discovery proved far more difficult than he'd expected. Its hiding place was ingenious enough—a one hundred watt bulb had been extracted from his reading lamp, another and more peculiar bulb fitted in its place. It was not until he removed the lamp's parchment shade that the substitution became apparent.

Twisting the bulb out of its socket, he examined it keenly. It had a dual coiled-coil filament which lit up in normal manner, but its glass envelope was only half the usual size and its plastic base twice the accepted length.

He smashed the bulb in the fireplace, cracked open the plastic base with the heel of his shoe. Splitting wide, the base revealed a closely packed mass of components so extremely tiny that their construction and assembling must have been done under magnification—a highly-skilled watchmaker's job! The main wires feeding the camouflaging filament ran past either side of this midget apparatus, making no direct connection therewith, but a shiny, spider-thread inductance not as long as a pin was coiled around one wire and derived power from it.

Since there was no external wiring connecting this strange junk with a distant earpiece, and since its lilliputian output could hardly be impressed upon and extracted from the power mains, there was nothing for it than to presume that it was some sort of screwy converter which turned audio-frequencies into radio or other unimaginable frequencies picked up by listening apparatus fairly close to hand. Without subjecting it to laboratory tests, its extreme range was sheer guesswork, but Armstrong was willing to concede it two hundred yards. So microscopic was the lay-out that he could examine it only with difficulty, but he could discern enough to decide that this was no tiny but simple transmitter recognizable in terms of Earthly practice. The little there was of it appeared outlandish, for its thermionic control was a splinter of flame-specked crystal, resembling pin-fire opal, around which the midget components were clustered.

Putting this puzzling assembly on the table, he lugged out of his pocket the torchlike object formerly carried by Sandy-hair, looked it over. This thing was two inches in diameter by six long, with a stud set in its side, and a fat lens of transparent plastic at one end. It was smooth, had the color of rhodium-plating, and was very heavy.

Since the entire casing was of seamless, brightly plated metal without an aperture of any sort, and since the lens effectively sealed its own end, it was obvious that he had erred in thinking it a gas projector. Pointing it out the open window, he pressed the stud. Nothing happened—at least, nothing visible. No noise came from the torch, no light sprang from the lens. He aimed at a glass pane with no better result. The glass remained intact.

Extracting a sheet of paper from his desk, he pinned it to the window, crossed to the opposite side of the room, aimed at the paper and pressed the stud. He might as well have menaced the sheet with a walking stick for all the good—or bad—it did. For five minutes he sat down and considered the problem. Returning to the wall, he again aimed at the paper, walked slowly toward his target while keeping the stud pressed. No result.

Maybe the gadget was a piece of bluff, or no more than a torch with dead batteries inside. The most certain way to get at its secret was to pull it to pieces, but he didn't want to do that without first discovering how it functioned. Get-

ting a big six-mag glass out of his desk, he ran its powerful lens over the paper target. At a point a little below center he discovered a mark in the shape of a perfect disk less than one-tenth of an inch in diameter. Light brown in color, it resembled a scorch-mark.

Finding another sheet of paper, he gave it a careful once-over with the glass and satisfied himself that it was devoid of blemishes. He put that up as a fresh target, walked toward it with stud pressed, examined it. A brown disk again. The discoloration was the same in tint, the same in size.

Ten minutes and a score more sheets of paper enabled him positively to determine that the mark appeared only when the target was a precise distance from the lens, said distance being five feet nine inches. Whatever power the torch ejected was effective only at that focal point: no reaction could be detected behind that point, none beyond it.

Fixing another sheet at the critical distance, he tied down the stud of the torch, watched the target. Very slowly the brown spot appeared, grew darker in color, finally became black, as if charred, though there was no flame, no smoldering. Switching off the torch, he blew away the disk of ash, stared wonderingly at the small hole left in the paper. It had taken the torch four minutes and twenty-two seconds to make that mark; far, far too slow for effectiveness as a weapon.

Setting a cup of water upon the table, he put a clinical thermometer into it, focused the torch on it. The mercury crawled sluggishly up its tube and reached peak in seven minutes, at which point it read 107° or well above blood-heat. Now thoroughly absorbed in his task, he tried the effect of the focal point on everything of which he could think, and all the time regretted that here he lacked the facilities of his own laboratory in Hartford. In four and a half minutes the torch charred the end of a cigarette without making it glow. It melted a speck of paraffin wax in exactly seventeen seconds. It lit the head of a match in eleven seconds. Half an hour later he got his first clue from what it did to a drop of gum arabic. The drop hardened and dried in eight seconds.

It looked as if the heat generated at the focal point was quite incidental. Some other sort of energy-field was concentrated there, and the heat was no more than evidence of mild thermal properties or perhaps an unimportant part of the reaction it got from materials it was not designed to influence. He was beginning to get a shrewd idea that what it could do to some specific substance might be startling in the extreme.

Following this line, and influenced by suspicions half-born and soon stifled many days before, he nicked his arm with a sterilized razor blade, got a few drops of blood onto a spatula, edged it into the focal point. The crimson liquid congealed instantly. He tried it again. Same result. The time was

a mere fraction of a second. He stuck a piece of adhesive plaster over the small cut in his arm, switched off the torch, flopped into a chair and sweated heavily.

That two inch by six instrument on his table was a weapon of tremendous might. He pondered its devilish efficiency while the perspiration flowed freely. The more he thought of it, the deadlier it appeared. Its supreme power was derived from a feature uncommon to weapons in general, uncommon even to detectable poisons—it was so surreptitious!

If you used a revolver or automatic pistol to kill a man in public, you committed the crime under every conceivable disadvantage, for it was a deed loudly advertised. The gun went off with an attention-attracting bang, the bullet whined and made a clunking sound, the victim dropped, sometimes with a yell and with dramatic gesticulations, and the wound ejected blood.

But with this infernal gadget you could walk past a man and give him the works without him knowing it, without anyone nearby suspecting it. If you had an excellent knowledge of anatomy, and especially of the venous system, and if you were a topnotch marksman with this torch, you could sentence a man to death with almost any time-delay you chose. Silently, slyly, and beyond the ken of passers-by, you could plant a blood clot in his heart and see him die of coronary thrombosis within minutes. Or you could create the clot farther along the inflowing blood stream where it would take a day, a week or a month to travel to the fateful point where followed swift collapse and swifter death. Unfelt and unsuspected by the victim or by anyone else, you could put the bee on him in such a way that he'd drop of seemingly natural causes, some time in the future, when you were on the other side of the world enjoying an unimpeachable alibi.

Pulling out a handkerchief, Armstrong mopped his forehead. How could he be certain that Sandy-hair had not pressed that stud while in Hansen's office? Supposing that a crafty and unnoticed compression of his thumb already had sentenced Armstrong to death in the near future? How many other victims might still be walking around unaware that their days were numbered, and that the number was dreadfully few?

Now that Sandy-hair had joined the ranks of the blank-eyed boys prone in the morgue there was no way of telling whether he'd booked his revenge in advance. An X-ray examination wasn't likely to prove effective. There was nothing for it but to wait and see whether one remained perpendicular or suddenly assumed the horizontal—gasping—clutching—and inevitably going out.

Like Mandle.

Like Marshall.

Like an unknown cohort of others.

Realization of the appalling menace of this torch caused his mind to recoil and move its attention back to the first gadget, the microphone.

Instantly it struck him that in his preoccupation with the other instrument he'd overlooked a fact so obvious that a child should have noticed it: that mike made no direct contact with the power lines. It got its energy by induction. If the lamp were not lit there would be no current-flow in its lines, no alternating surges to activate the tiny coil and start the mike's circuit working. The mike was dead so long as the lamp was dead; it functioned only when the lamp was lit.

The conclusion stuck out a mile. His opponents had accurate knowledge of his habits, knew that rarely he occupied the apartment during daytime but often could be found in it at night. They also knew that it was his invariable habit to switch that lamp regardless of whether or not it was needed. The switching was his fad.

He was thinking rapidly and lucidly now. Sandy-hair and his crew had burst in on Hansen with remarkable promptness. They'd been listening and had not come far; evidently their eavesdropping post had been near. It wasn't likely that they'd abandoned the post the moment they decided to take a hand. In all probability, another as yet unknown member of the mob had remained on the job, listening, listening until a veritable blast of sound had driven him to flight.

The news would have got around. Wherever they were, and whatever their numbers, the rest of the crazy clique would know by now that their attempt to ally themselves with Armstrong had cost them three men. They wouldn't like it, not one little bit. No matter how much his views on rocket-shots coincided with their own they'd accept him as a foe—and take measures accordingly. Likely enough they'd take them anyway, as a matter of necessary vengeance.

This meant that he found himself in as paradoxical a jam as any man could be. Hansen, who knew the least, had told him the most. The F.B.I., who were well informed, had given him nothing. Sandy's crowd, who supported his aims, were his enemies. The Norman Club, who opposed him grimly and fanatically, had made overtures of friendship. The whole situation was madder than a polecat's convention, smelled just as bad, and was a lot more threatening. In fact, it was the sort of contradictory state of affairs one should expect to find—inside an asylum.

The most immediate problem was that of the most immediate peril, namely, when, where and how the dead Sandy-hair's avengers would strike. So far as they were concerned he was a sitting duck. They would listen for him with the darkness, pick up his last and most significant words, bide their time and let him have it either while exiting, or entering or perhaps actually in the place.

To go out was asking for trouble. To stay in was praying for it—except that here he had a sturdy door with a strong lock. But if that mike worked when the lamp gave forth light . . . ah . . . hum . . .

they wouldn't listen for him before sunset. There was time to beat it before daylight faded. If he got out fast and moved too rapidly for any tail to keep up, he could drop the lot of them and remain secure in a hide-out some place else.

The notion lay in his mind like a stink. He even wrinkled his nose at its odor. Running like a rat! Seeking a funkhole! The idea offended his self-esteem, made him ireful. It was contrary to his nature. Substituting sentiment for sense, he decided that he'd no objection to scuttling out of reach providing he could paste them one on the schnozzle first. Finding a bolthole would be a more dignified affair if he sought it after handing them a slap. Could it be done?

Maybe it could. The listeners would arrive at their posts with the dusk. Said post was likely to be within two hundred yards radius of the apartment. A small enough area, small enough to cover, and grab all eventide arrivals, searching them for torches or any other outlandish gadgets they might be bearing. Such a snatch would mean that the counter-trap had operated to his satisfaction, the paste on the schnozzle good, strong and effective.

No use summoning Hansen for a job like that. They'd be watching the agent as closely as himself and maybe with motives just as deadly. Hansen's men preparing the trap would be like advertising it over the visivox.

Summon the cops?

Summon the F.B.I?

A queer, nagging voice within him said: *"To blazes with the cops and the F.B.I. You don't know who's on which side in this daffy mix-up."*

"Then what the heck—?"

"You know *who you are! Do it yourself! Give them a moose-call —they'll come running!"*

Startled, he picked up the cracked microphone, examined it carefully. A gleam crept into his eyes.

If he'd still been capable of the contortionist feats of his babyhood, he'd have kissed his right heel. Good heel, nice heel—you didn't come down too hard. Just enough to crack the casing without busting the works. It'll still operate—this time, for me!

The lamp portion was broken, of course. That didn't matter. No use reconnecting the broken ends of its filament to restore continuity; the wiring came in parallel, and a resistance as low as that would be as good as a short, good enough to blow a fuse. His solution was easy: he brought in his bedlamp, bared the ends of its cord, joined the broken wires to that. Then he took out its bulb and substituted a one-hundred watt job. Functionally, the dingbat was as ready for action as in the first place.

Next, he found his .38, checked its mechanism, made sure that it had a full magazine. After viewing that torch, the .38 looked as antiquated as a crossbow. All the same, it had its advantages, it was not as insidious a weapon as the torch but its deadliness was immensely

swifter. He was more accustomed to it, too. He could wallop three nickels in a row at twenty yards, and that was no parlor game.

The wait until sunset was the worst part. Mooching around, he tidied things up, untidied them, thumbed books and muttered with impatience. He was as restless as a rhinoceros who has scented but not yet seen the foe—and as heavy-footed.

He switched on his *Herald* recorder. Nothing new. No mention of the fracas at Hansen's. Too early for that. Nothing about rockets, either. A slump on Wall Street, two suicides, a domestic massacre and another instalment of young Wentworth's life-story held the field. Murder in the financial marts, murder in high society, murder in the dirtier dumps. News values. What the public wants. Boy bites debutante.

All the fits that's news to print.

Vitalax.

"Skiddin'—!"

"See how you like the madhouse *now!*"

He glowered out of his window. There were purple fingers in the sky, creeping from a rising and broadening bowl of darkness. Already two skyscrapers a mile away were brightly illuminated and another seven were patchy with lights. Dropping the window shade, he switched on his reading lamp, watched the mike warm up. The process was visible, for the splinter of crystal in the mike's center glowed a deep, rich pink. All set now for the unseen snoopers—Martians, maniacs, or whatever they might be.

More waiting. He gave them until nine o'clock, confident that they would not burst in without some preliminary eavesdropping. They'd hope for a last golden egg of information before killing the goose.

At nine precisely he broke the silence by picking up his phone and dialing it with the stud out. That wouldn't get him anything, but if the hidden listeners were shrewd enough to count the clicks they might recognize it as Hansen's number. Leaving the phone, he reposed in an easy-chair facing the door, carried on a conversation with nobody.

"Harumph!" He cleared his throat, pictured an ipsophone dial, mentally counted four, and said: "Switch!" He gave it suitable time, then went on with: "Hello, Hanny. So the cops didn't drag you in?" Pause. "No, I had a difference of opinion with the F.B.I. and we parted the worst of friends." Pause. "Yes, a bad business. I've only realized how bad now that I've had time to think it over. Those cops completely balled up the works."

Eying the door, he stopped a moment, raised his voice slightly. "How? For the love of Mike, have you lost your wits? Here's me at long last making contact with the only guys who're going my way—maybe the only ones who can help me—and they get shot up."

Pause. He let it last, as if listening. Then, in sourer tones, "Sure

I stalled them. I wish now that I hadn't. But I don't take up any proposition the moment it's dumped in my lap. I like to look it over to see whether anything I pick up is going to bite me." Pause. "Now, at this time, several hours too late, I can see that Pete and those cops have bust things to heck and away. I've lost contact. It's up to you to regain it if you can." Pause. "Yes, I know, but what am I paying you for?"

Another mock listening-wait. His voice dropped back, but was still clear. "All I ask is that if you get a line on them somehow, anyhow, keep it from the authorities and give it to me. I've got to find this crowd before somebody starts beating both of us over the noggin." Pause. "Yes, you bet! I had to warn you about this. And you warn that dumbcluck Pete to keep his trap shut, too." Pause. "All right, I'll see you tomorrow."

Reaching out, he made the phone emit a cut-off click, lay back in his chair, watched the door. The old moose-call!

He was still sitting and waiting three hours later when a large clock in the distance solemnly struck the hour of midnight. Three hours and no response. He mulled the possibilities while grimly determined to wait even if he had to squat there until dawn. There was a remote likelihood that Sandy-hair's fate had scared them off, nobody had come along to snoop, and his vocal performance had been in vain. Or maybe the four corpses really did represent the lot—there were no more either to flee or to seek vengeance. He rejected that latter possibility on the ground that fanatics form circles bigger than mere quartettes.

If the phone itself had been tapped, they'd know his call to Hansen was a call to them to come and get it. That might have been done years ago, in times of external lines, but not now. The most plausible explanation for the unexpected delay was that the listeners lacked authority to change tactics to suit his sudden change of front. Doubtless the intended victim's display of co-operative spirit had disconcerted them, they'd had to report his about-face elsewhere and get instructions. In that case, they might be along anytime during the night—if they were coming at all.

They came.

Unheralded by footsteps in the corridor outside, a sharp knock sounded on his door. Coming to life, he got up, opened the door, gazed inquiringly at the two men standing on the threshold.

The first said, coolly: "Mr. Armstrong?"

"That's me."

"Sorry that we're calling on you at so late an hour." His eyes deliberately raked what they could see of the room over Armstrong's shoulder. "We want a chat with you. It's about this afternoon's events, and it's rather urgent."

"Come in." Standing cautiously to one side, Armstrong watched them enter.

They moved forward, easily, con-

fidently, one behind the other, their hands deep in their pockets. Again their eyes searched the room before they took chairs.

Closing the door, Armstrong said: "You're police, I presume?"

"Not at all." The first intruder permitted himself a hard grin. "We represent the victims, in a way."

"In what way?"

"That depends," responded the other, carefully, "on what we consider best preserves their interests at any given moment."

"You're talking a lot and saying nothing. Get down to brass tacks."

"Those were the very words I was about to use to you. You've done quite a lot of talking yourself just lately—a few hours ago. But you didn't say anything." He stared steadily at Armstrong who noticed that his eyes were the same light blue as Sandy-hair's had been. This fellow's hair, though, was mousy. "If you've something really to say, then say it. Get down to brass tacks yourself."

Armstrong said, morbidly, "You people go about things in a sloppy way. No attempt to gain the confidence of the customer. In fact you take pains to push up his sales-resistance before trying to sell him." Planting his broad beam on the corner of the table, he pressed his hands palms downward on the table's surface, close against his sides. "You invade my apartment at an ungodly hour, demand that I talk, but give no indication of who's doing the listening. I'm not going to shoot off my mouth to the first guy who comes along saying, 'Give!' That's why I stalled the three I saw this afternoon. Before I start talking, I want to know who you are, where you're from, and where you stand with reference to me. And I want proof."

"Fishing, eh?" The other's grin came back. "We treat you like a father confessor before you condescend to bless us with information?" The grin grew craggy. "You've got a darned cheek seeing you're here with us—alone!"

"Yes, that's what bothers me," admitted Armstrong, primly. "And we're not even married."

"Funny!" said the other, unpleasantly. He showed his teeth. "Very funny!" He glanced at his companion who was sitting tensely on the edge of a chair and saying nothing. To Armstrong, he continued, "Come off the high horse. We know you've been talking of wanting to dicker with us. We suspect your motives. Your attitude does nothing to allay that suspicion. So far as we're concerned, the proof of the pudding is in the eating; if you're sincere in your desire to join with us, you can prove it by dishing out the essential dope."

"Be more specific," growled Armstrong. "It's too late in the night for riddles."

"Come out with all the information you've got about rockets nineteen and twenty." His look was challenging. "If you give us that, we're satisfied. We're brothers-in-arms or however you care to look at it. But if you don't give—"

"Say on," Armstrong urged. "I don't mind cuss words."

"You won't mind anything very much," retorted the other. His hand moved suggestively in his pocket.

Armstrong shot him where he sat. Two pellets, one hard after the other, *blat-blat*. He saw the fellow kick back as if sledge-hammered, but didn't pause to watch. He was off the table and around it while reverberations whacked to and fro within the room. Ability to move so swiftly usually upset the calculations of people accustomed to the ponderous motions of big men, and he was trusting to that to enable him to avoid the silent, invisible flare of the second man's torch. Both of them, as he'd realized from the first, had stationed themselves strategically, distancing themselves so that he would be precisely in focus. A quick jump behind or beyond that focal point would save him even if the stud were pressed.

So he dived hell-for-leather around the table even as the second man came erect. The fellow's hand was out of his pocket, and the torch shining in the hand. Armstrong popped a fast one at his wrist, missed, and triggered again. The other lurched backward, swore, dropped the torch but swung up his other hand with something gleaming bluely in its grasp.

This was no time to ponder the obvious merits of bringing 'em back alive. Regretfully, Armstrong plugged him one inch below the hair-line. The victim leaned backward against the wall and slid down. He released his grip on the blue object which promptly shattered and spewed a hellish shower of hot, scintillating sparks.

For a moment, Armstrong stood there gaping uncertainly at the small volcano on the floor. The next instant it hissed like a locomotive and a pillar of intense flame spouted from it. The flame roared up to the ceiling. It was like a monster blowlamp aimed through the floor by someone in the room beneath. The roar built up until the room trembled, and the sheer intensity of its heat drove the watcher to the door.

Pocketing the gun, he got out fast. The edge of the table and a corner of his desk burst into flame behind him. Racing upstairs, he tried to warn the occupants of the apartment above his own, found nobody there. There were no floors still higher. In the fastest time he'd ever made he got down to ground level, sent in a fire call from the nearest box.

Within a few minutes the street would be crammed with firefighting paraphernalia, cops and spectators. A late night crowd, massing and murmuring, would be ideal cover for small-time thieves—and big-time torchers. To seize and search every member of that audience would require a full division of police. It wouldn't be wise for him to stick around; the sensible thing was to get going while the going was good.

Hastening up the street, he signaled the first taxi he encountered. There were no external signs of

the fire as the machine whirled him away from the scene. For twenty minutes he made his puzzled driver do two up and one along, circle several blocks and backtrack three or four times while carefully he watched the rear view. Uptown, he switched taxis, repeated the performance, switched again to the subway, jumped trains, and finally felt satisfied.

This performance landed him a few blocks from Bill Norton's place. He walked it under a full moon which smirked down upon him tantalizingly.

After long delay, Norton answered his knock, appearing at the door in old pajamas. Scratching his tousled hair, the scribe blinked at him blearily.

"Oh, you! Whassermasser?" He gestured wearily. "Come in, anyway. Dontcha ever go to bed?"

"Not when I might be fried in it." Armstrong lumbered inside, looked around, sniffed distastefully.

"Eh?" Norton eyed him vacantly and enjoyed a wide yawn.

"I go to bed to sleep, not to be cremated."

"Yes, sure." Finding a tattered dressing gown, Norton struggled into it. "Don't like getting too hot myself." He fiddled dozily with the gown's cord, yawned again, patted his mouth. "'Scuse me. Durned if I'd go wandering around this time of night, just to cool down."

Armstrong frowned at him. "They've set my apartment on fire."

"Must've been some party!" Norton strained lackluster eyes at him, blinked, nearly fell asleep. "Who did you say?"

"I didn't say who."

"I thought you didn't." He managed a semisomnolent leer. "Dames, eh? Frisky ones?"

"Oh, get back to your hay," said Armstrong, shortly. "Give me some place to flop. You'll hear all about the big fire in the morning."

"*What?*" Norton woke up. "Did you say a *fire?* When? Where?"

"Nuts!" Armstrong snapped. "You're not on duty, so what do you care? Find me a big rug, or lend me a sofa or something."

"There's a spare bed in there." He pointed to the room on his left. "But what about this fire?"

"Good night!" bade Armstrong, impolitely. "You can bill me another steak in the morning." He went into the room, surveyed the small camp bed, shoved his .38 under the pillow, commenced to undress.

Watching him from the doorway, Norton said: "Let Dooley have it. I done enough for one day." Stretching his mouth, he added a weary *yeouw!* and ambled off, his pajama trousers flapping around his legs.

XI.

Norton shook him at seven-thirty and posed by his bedside scowling.

"You big, ugly, dumb bum! They had eight fire-squads on the job. Half the street was gutted."

"Anyone hurt?"

"No. It was the biggest fire in four years, but no one has been hurt as far as is known at present."

"Thank goodness for that!" Rolling over, Armstrong tucked the bedclothes around his ears.

Snatching them off, Norton bawled: "Why didn't you *tell* me?"

"Oh, for Pete's sake!" Armstrong lugged the clothes back again. "Let me catch up on what I've lost, will you? I did tell you. You were too dull-witted to hear even your own snores. How'd you find out, come to that?"

"I phoned the *Herald* and asked."

"That's the best way to round up news," Armstrong approved. "Phone the paper and ask."

Norton said, nastily: "I could strangle some guys!"

"Me, too. I've a private list of them." Closing his eyes, Armstrong sighed luxuriously. "What's for breakfast?"

Pushing his face unpleasantly near, Norton snarled: "You don't get breakfast, see? I haven't got time, see? I overslept and I'm late on the job already, see? I always oversleep when guys come dragging me out of the sheets, see?" With considerable ire, he observed his listener's total lack of expression. "And even if I did have time, you wouldn't get any. Not unless I slapped it over your pan. Moreover, when you do get it I hope you have to go five miles for it and then it chokes you."

"The perfect host," murmured Armstrong, dreamily. "Close the door when you go out. I'll tidy up before I leave."

Favoring him with an evil look, Norton took the hint. He stamped angrily into the next room, looked back through the doorway a moment later, the scowl still on his face, and his hat pulled down to his ears. Then he departed, breakfastless. Alone at last, the sleeper snored on for another two hours.

It was mid-morning before Armstrong was ready to leave. He washed, shaved, did the promised tidying, finally used Norton's phone to call him at the *Herald*.

"How're you feeling now? Any more angelic?"

"I feel better," Norton admitted. "I got something to eat across the road and I've had an hour's doze in the office."

"Good! I'm just about to pull out and wanted to say thanks for the flop. It was nice of you."

"I am nice," said Norton. "Sometimes I get tired of hearing my admirers mentioning it. But I'm a heck of a lot nicer when guys pick better hours for craving my charity." He smirked craftily. "If you'd come along at a more reasonable time, I'd have given you a suck at my half-bottle of whiskey."

"I've had it," Armstrong told him. "I found it in the bathroom cabinet."

Norton's face swapped expressions, and he yelped: "Hey, you—!"

"No use crying over lost bourbon! What's the latest news about that fire?"

"Same as earlier. They got control of it and put it out. Lot of damage to property, but nobody hurt."

"Nobody?"

"That's what I said."

"Not even one teeny-weeny corpse?"

"Did you expect a corpse?" asked Norton, pointedly. "Maybe you *started* that fire, huh?"

"I expect anything these days. A regiment of cadavers wouldn't surprise me." He mused a moment. "All right, Bill, I'll phone you anon."

"When'll that be?"

"Some time," he gave, ambiguously. He cut off, went out, making sure that the apartment's door was securely locked behind him.

He strolled rapidly down the street, grimly aware that he was enjoying the personal view of a man on the lam. That mob of Martian deportees—or whatever they really were—now had him marked as Enemy Number One, to be dealt with as swiftly and efficiently as possible. Knowing the details of his habits, they'd have ideas about where to pick him up: Papazoglous' restaurant, or Hansen's place, or the Hartford laboratory, or even via Claire Mandle. Ten to one they'd be counting on him reporting the episode to the police, and they'd be laying for him near the precinct station and general headquarters. Probably they'd have an eye on F.B.I. headquarters as well.

There didn't seem to be any satisfactory way of reporting to the police while avoiding a demand that he come in for questioning. Such a report, phoned, mailed or given in at some distant station, was bound to produce a peremptory demand for his personal appearance on what might prove to be the spot marked X. Any refusal by him wouldn't look too good, especially if the cops were trying to account for two unadvertised bodies. The choice lay between disregarding the police and risking the sorry consequences, or doing his duty and thereby walking into an ambush.

According to Norton, there were no corpses to be explained. If that were true, it made his solution easy. But was it true? Either the bodies were yet to be discovered, or, less likely, the fire had consumed them utterly, or they'd been snitched from the holocaust, and despite it, by persons unknown. Too, there was the possibility that the police had found the dead pair but had kept the fact to themselves for the time being.

To dive out of sight right after a double shooting would be enough to make any jury of solid citizens form prejudices in favor of his guilt. "Self-defense? Don't give us that! Then why didya beat it? Why didya fire the dump and take it on the run, eh, tell us that?" It was a sticky situation.

But the alternative remained to be torched without knowing it until the last, dreadful moment of collapse. Which reminded him—that fire had cost him the specimen torch. He could go no further with that potent instrument unless sooner or later he could capture another.

His decisions crystallized one after the other. First, he must leave the car in its garage; it was

too much a part of his personal life not to be under observation by others. Next, he had to avoid the bank he patronized regularly, and cajole some dough out of another of its branches. Money was needed, since he had nothing but the clothes in which he stood plus the contents of his pockets.

The bank proved easier than expected. At the local branch they held his check before the telephone's tiny scanner and the teller at the other end identified both the signature and its writer. They gave him a wad without demur.

Possession of adequate funds made him feel good. He celebrated with a meal in a small dive near Bowling Green, disposed of it hurriedly, then tried to phone Hansen's office. No reply. He tried again twenty minutes later, still without result. A third attempt half an hour afterward proved equally futile.

When calling on Hansen he'd noticed the nameplate of some other outfit on the ground floor of the same building. What was it? He hung around the phone booth until the name came back into his mind —"Spearman's Mantles." They were in the directory. He dialed their number.

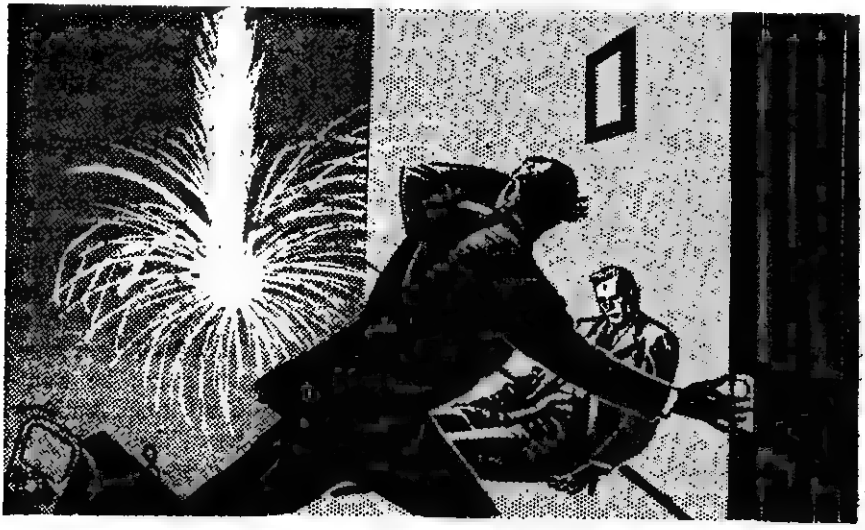
A fat-featured and extremely swarthy individual loomed into his screen and said: "Spearman's! You want what?"

"I want Hansen's Agency, but I've not been able to raise them on the phone. Can you tell me whether anything is wrong?"

"That I should know, eh? Is for me to find out, hah?"

"If you would be so kind."

"Kind I am," said the fat man. "Wait. Don't go way. You hang on. I send somebody to see." His moon features turned sidewise and he bellowed, "Asher! Asher! Is for you to go upstairs and to Han-



sen speak. People can't get through his phone. You tell him a gentleman wants him down here." He turned full face again. "You hang on. Don't go way, Asher won't take not more one minute."

"Thanks very much." Armstrong looked stolidly at Moon-face who gazed back until both became embarrassed by the silence. "Nice weather we're having," Armstrong offered, helpfully.

"Stinking!" contradicted Moon-face. "Is not good for business. You like a good fur? We got plenty. Come and look them over."

"Sorry."

"Is cheapest to buy out of the season," the other urged. "Down goes thermometer—up goes prices. Give you ten per cent off today." He stopped, turned to listen to someone not in the scanner's view, looked back at his caller. "Is locked. Hansen's office. Nobody there."

"All right. I'll find him some place else. So good of you to go to the trouble for me—I appreciate it."

"Is no trouble," Moon-face assured. "Don't you forget—ten percent off."

Smiling, Armstrong cut off. His expression slowly changed to a thoughtful frown. Nobody at Hansen's, not even Miriam. Looked very much as if the wily agent had drawn the same conclusions as himself, had ducked out of sight for the same reasons. If both of them were lying low, they were going to have a deuce of a job finding each other. To add to the fun, the cops would want both of them fairly soon since their evidence before the district attorney would be required to close the case of Sandy-hair and his fellow stiffs. The cops were inclined to be liverish about witnesses who took vacations.

The Norman Club was yet another item. Lindle and his associates had freed him and left him unmolested only because they were confident that he'd return to them of his own accord after thinking things over. Eventually they'd realize that he was not about to enter their fold, that he was remaining stubbornly in opposition despite his proved sanity. Once they got that into their heads they'd be tough. Providing that they could catch him, they'd deal with him in some characteristically cunning way which would arouse the suspicions of no one. Instinctively, without knowing exactly why, he credited the Norman Club with more finesse than Sandy-hair's gang. He suspected that whereas the latter's victims died of apparently natural causes, the former's did not die at all—they became incurable goober-jugglers and were locked away. After a taste of the psychotron, it wasn't difficult to imagine what an overdose of it might do!

Without the fabled preliminary of inventing the perfect mousetrap, the whole world would be seeking him before long. Hansen and his boys undoubtedly were trying to regain contact with him right now. Sandy-hair's mob would be wanting him more badly than Anthony wanted Cleopatra. Tomorrow, or the next day, the cops and probably the F.B.I. would have a call out for

him. Sometime after that, the Norman Club would generate a yen for whatever was left of him. A motley field of hounds—but he'd give them a good run for their money!

Tramping to another phone booth half a mile from the first, he called Idlewild, chartered a two-seater plane for New Mexico. They booked him a fast sports model, a jet job, complete with experienced pilot, and entered his booking in the name of Thompson. Next, he called Claire Mandle.

"This," he said, unnecessarily, "is me."

"So I see." Her impish features grew clearer in his screen. "And sober again, too!"

"Am I?" He registered astonishment. "Love must be fading!"

She looked momentarily confused, recovered her self-possession and said, tartly: "You've been sleeping with the cutlery. You're too sharp for me today, Mr. Armstrong."

"John!"

She ignored it.

"John!" he persisted.

"Go on—bully me from a safe distance."

"If you refuse to call me John, I'll stop calling you Claire, and I'll substitute"—he thought it over, finished with malicious triumph—"Tweetie!"

Her responding shudder was gratifying. "All right—John!" She changed her manner to one severely professional. "I don't suppose you have called me merely to bandy small talk. About what do you wish to consult me this time?"

Watching her closely, he shot back: "The Norman Club."

"Oh, that!" she said, indifferently.

Slightly amazed, he snorted: "So you *know* of it?"

"Don't snort at me like a warhorse! Of course I know of it! Who doesn't?"

"About ninety-nine point nine per cent of the world," he retorted. "What *do* you know about it?"

"Only that it exists," she answered, vaguely, "and that some very important people belong to it. They came after Bob once. They wanted him to join."

"Did he do so?"

"Really, I don't know—but I doubt it."

"Who was to sponsor him?"

"Senator Womersley." She became curious. "Why the sudden interest in this club? It's only another club, isn't it?"

"I'll say it's a club," he told her, dryly. "The sort of club that's used to batter people's brains out of their noggins."

She laughed. "You don't seem to like them."

"I've no reason to! They tried to persuade me to join, and their methods of persuasion were a good deal too autocratic for my liking. In addition, they're sabotaging rocket shots."

He studied her pixie face as it registered incredulity, skepticism. If those reactions weren't genuine, then she was a topnotch actress.

"That's silly," she protested. "Rocket failures have occurred for

quite a long time, all over the world."

"By a most astounding coincidence, the Norman Club has existed for quite a long time, all over the world."

"But, surely, they'd be arrested, imprisoned?"

"You bet they would," he agreed, "if fellow members in high positions of authority gave the order!"

"You've got a bee in your bonnet," she diagnosed.

"I know it. And it's not going to sting me, either—not if I can help it."

"Oh, dear!" she sighed. "Sometimes I wonder whether the whole world is going queer."

"Ah!" he said, knowingly. "Ah!"

"What's that for? Has somebody put a stethoscope to your chest?"

"Someone put a ditherscope to my bean." He sucked in his cheeks, distorted his mouth, squinted his eyes violently. "That's why I am like I am—queer!" He straightened his face again. "Most everything has a value which is relative, you know. I'm queer relative to the nuttier nuts, or so I'm told."

"I take back what I said in the beginning," she decided. "About being sober, I mean."

"Judge me in person," he invited. "Can I meet you again when I get back?"

"So you're going away?"

"Yes." He watched her closely, waiting to see whether she'd ask *where* he was going. It was important, that! It was essential to know the extent of her interest in his destination, and it should be enlightening to observe her face as she asked.

"For very long?"

"No longer than I can help," he evaded.

She smiled at him. "Then call me again when you return—you may catch me in a sociable mood."

"All right," he agreed. "'Bye, Claire!"

He was thoughtful as he cut off and saw the little screen cloud over. She had not asked. Her omission was unflattering, yet it cleared some of his vague suspicions. If she had inquired, he would not have known whether to feel gratified or warned. It all depended upon whether his movements interested her personally, or interested others with whom she might be in cahoots, and from the latter viewpoint it was just as well that she had shown no curiosity. Unless, of course, her wits were two jumps ahead of his own, and she had perceived the trap!

A taxi took him to the drome where he found his jet-job awaiting him on the tarmac. The pilot, a lean, lanky, yellow-curled youth, grinned down at him from the streamlined cockpit, gave the port and starboard turbines a preliminary spin. A strong smell of paraffin permeated the air as spurts of vapor shot backward from both wings.

Tossing up a large lunch box, Armstrong heaved himself after it into the small cockpit, squashed himself into the port half of the side-by-side seat.

"Mr. Thompson?" the pilot checked. Armstrong nodded. He went on, "I'm Captain Oliver Moore. The boys call me Ollie." He eyed the lunch box appreciatively. "That was mighty good of you." His gaze shifted to the tarmac. "Are we all set?"

Armstrong said: "Take her away."

They trundled over to the east-west runway while their radio yammered instructions from the control tower. Reaching the limit of the strip, they paused while the turbines revved up, then slowly they began to edge forward. Suddenly they rocked from side to side as somebody snatched the world away from beneath them. The planet fled from their tail.

"Nice jobs," enthused Ollie. "I love 'em!" Dexterously he gunned her over a fat cloud.

"They hold only two," Armstrong commented. "That's what I like about them."

Ollie looked mystified.

"I'm running away from my wife," Armstrong offered, solemnly.

The plane dropped on something soft, gradually rose again, swaying as if suspended by a string. Ollie's face was disapproving.

Putting his feet on the lunch box, Armstrong tilted back his head, closed his eyes, went to sleep. The jets emitted only a faint, slumbersome murmur since their real uproar was not less than half a mile behind. Ignoring the hearty snores at his side, Ollie nursed her while she swung and sank and rose lazily —yet at tremendous pace. His eyes flickered continually from windshield to instrument panel, but his mind was on a certain strawberry blonde. If ever he ran away from her, he would be nuts!

With the lunch box empty, and the darkness of night all about them, they picked up the repeated *pipper-pop* of a radio beacon, and shortly swooped into the flare-path at their destination. They touched down neatly, raced halfway along the strip, waddled the rest of the way to the perimeter. Armstrong climbed out, stretched his arms, exercised his stiff joints.

"A sweet hop, Ollie. It does you credit." He put on a mask of anxiety. "If anyone asks you about Louie Thompson, you took him to Chihuahua or any other foreign part you fancy."

"I'm a flier, not a liar." Ollie glowered his reproof from the cockpit's sliding window. His face withdrew from sight, his machine ambled through the darkness toward some distant dispersal point. The navigation lights gleamed red and green on the wingtips as the plane swung round in its far parking place, then they winked out.

Armstrong smiled to himself, decided that Mrs. Ollie wore the pants in a most becoming way.

After a fidgety night in a ramshackle hotel, he was up with the dawn and arrived at the rocket site so early that he had to wait half an hour for the technical staff to appear. The guards who had admitted him on previous occasions were not on duty, and the tough,

belligerent specimens functioning in their place were disposed to doubt his credentials. Bluntly, they refused him admission. Until Quinn turned up and vouched for him he kicked his heels outside the main gate while the guards kept him under beetle-browed observation.

Quinn yipped at him joytully: "Well, well, the world's mightiest midget!" He led Armstrong through the gates. "To what do we owe the pleasure, Ugly?"

"Just come to have a look at what's doing, and pick up any fresh information."

"Still sleuthing, eh?" He punched the muscle of the other's arm. "What about those names you persuaded me to dig up for you? Have you exposed them, and slung them into the calaboose?"

"Not yet."

"Not yet?" George Quinn echoed. "You're still on the trail? The Mounties get their man, eh?" He chuckled his amusement. "How many corpses have littered your path?"

Armstrong pulled out a big pipe, sucked at it without bothering to fill it, and said, curtly: "Only eight."

Quinn fell over his own feet, and yelped: "You're ribbing!"

"Professor Bob Mandle, Clark Marshall and half a dozen members of some crackpot gang," Armstrong continued, evenly. He had a noisy suck at the pipe. "I'm supposed to be the ninth. Probably a guy named Hansen is to be the tenth. Providing they can catch us!"

"Who are 'they'?" demanded Quinn, becoming goggle-eyed.

"That's what I'd like to know."

Wig-wagging his arms as if playing ducks, Quinn said: "Now look —death isn't funny. It doesn't make me laugh myself silly. If this stuff is your idea of making conversation—"

Taking his pipe from his mouth, Armstrong rasped: "I tell you that eight guys have died, to my knowledge. There may be dozens of others of whom I don't know. There may be many more yet to die, including myself—and including you! I don't give a care whether or not you believe it." He rammed the pipe back into his face, his strong jaw tilting it at a sharp angle. "The main thing is to keep out from under the chopper, for as long as one can."

"Thank heavens I'm beating it to the Moon just as soon as the ship is ready," Quinn said, piously. "Next time some dope asks me why I'm risking my neck to get out I'll ask him who wouldn't."

They stopped as they came to the tall, silent metal tower that was the unfinished ship. Its smooth, cylindrical shape was black save where the morning sun struck a crimson gleam down one side. Its body had gained a mere ten feet since Armstrong last had seen it.

"A bit more has been done," observed Quinn, without much enthusiasm. "They've fitted the hindmost impact-ring, as you can see. There are four more rings yet to be put on along with the nose-cap. A set of newfangled carborundum

stabilizing vanes arrived yesterday and should be fitted before the week's out. There's a little more of the plumbing been done inside. About half the guts are installed."

"At that rate, it'll be ready for instrument tests the other side of Christmas."

"I dunno. I can't make out what's going on in Washington. One time they're rushing us along, the next they're holding us back. They start out feverishly to get the job done as quickly as possible, then they ball up the works and delay the task hopelessly, then they put on another frantic spurt, then ball it up again. The way they act, it looks like they can't make up their own minds whether they want to grab the Moon or not."

He glanced at his listener, obviously inviting comment, but getting none, he carried on: "Sometimes I can brace myself sufficiently to bear the acute agony of thinking. When I do, I think up some queer notions."

"Such as which?" Armstrong encouraged.

"I get the idea that among that political mob in Washington are rival gangs fighting for and against spaceships. Both of them have lots of power and influence, and both use it for all they're worth. So here, in New Mexico far from the scene of conflict, we speed up or slow down according to which way the tide of battle goes at any given moment."

Armstrong said, disarmingly: "Rocket shots eat money. They are champion moola-guzzlers. I never heard of a money-swallowing project that wasn't the subject of a political row." He gave the ship a final once-over. "Let's go."

They found Fothergill in his office. The executive's glossy hair looked as if it had been gummed down and left undisturbed for at least a month. As always, a vase of flowers occupied one corner of his desk.

Forcing an expression of pleasure into his unwilling features, Fothergill murmured: "Back again?"

"I come and I go. Do you mind?"

"Why on earth should I care what you do?"

"I'm glad that you don't," Armstrong informed, dryly. "Too many people seem to be caring these days. I'd rather not enjoy their attention."

Fothergill opened his mouth, changed his mind, closed it without saying anything. He gloomed dumbly at the flowers.

"I'd like to ask you a question or two," Armstrong said.

"For the love of Mike, don't take up where you left off last time you were here. Progress on the ship is held up for substantially the same reasons as I gave you before. I've no more information to add and, to be candid, I'm getting fed up with the subject."

"Then we'll change the tune." He fixed Fothergill with an unpleasantly penetrating eye. "Can you tell me anything about rockets nineteen and twenty?"

The other's face quirked. Swiftly, he asked: "Who's building them?"

"That's what I'm asking you."

"Me?" Fothergill was prettily surprised. He smoothed his hair confusedly. "So far as I know, number eighteen is positively the latest. I know of no others. What makes you think there are others? Who told you about them?"

"Minnie Finnigan."

Fothergill was pained. "Who's she?"

"You don't know her, of course. She gets around. When she gets here, I'll introduce her to you. She cultivates flowers."

Quinn snickered. He shut up when Armstrong looked at him.

"Does she now?" Fothergill displayed sudden interest. "What kind of blossoms?"

"Precious ones. I forget the species. But never mind that—it's beside the point." Studying his big boots, he thought a moment, said to Fothergill: "Is Healy still working here?"

"Yes."

"And Muller, Centrillo and Jacques?"

"Yes—what's wrong with them?"

"They're the boys likeliest to bust the ship if ever it gets busted."

"How do you know that?" Fothergill challenged.

Ignoring the question, Armstrong snapped at him, "Ever heard of the Norman Club?"

"Never! Am I supposed to have heard of it?"

"Not necessarily. Neither are you supposed to admit it if you have. I wanted your reaction rather than your reply."

Flushing a deep red, Fothergill said: "Each time you come here you bait me with petty insinuations. There is no reason at all why I should answer any of your questions, truthfully or otherwise. You've no authority over me."

Butting in, Quinn pleaded to Armstrong: "Let's not start mussing one another's hair, John. It's plenty bad enough in this dump without souring the inhabitants still further."

"It wasn't my intention to push you around," Armstrong told Fothergill, soothingly. "I'm afraid you emote too readily. When a guy gets excited his face tells things which he refuses to voice—and I've got to get information somehow."

"So far as I'm concerned, you're not entitled to any information from me. You've no authority over me, as I've told you."

"None whatever," Armstrong agreed. "It had never occurred to me to apply for any—not as long as I can manage without." He smiled as he noticed the touch of uncertainty which crept into the other's face. Getting up, he strolled to the door, Quinn following. "All the same, thanks a lot for giving me so much of your time."

Outside, and well away from the building, Quinn ordered: "Come on give! Who's this Minnie Finnigan?"

"What do you care?"

"Well, what's all this stuff about two more rockets? Is someone getting ahead of us? Who is it—the Russkis, the British, the French or who?"

"Them danged Northerners."

"Eh?"

"This hyah is a Suth'n rocket, suh," declared Armstrong, waving a hand to indicate the landscape, "and them Yankees is scheming to outsmart it, shor nuff!"

Quinn said, loudly and emphatically: "You're nuts!"

"It's this way, George." His voice grew serious. "Somebody is mighty interested in rockets nineteen and twenty. Said parties appear to be convinced that I know as much about them as anyone—and maybe more than most. Nothing I can say to the contrary is good enough to make them believe otherwise. Yet I don't even know that such rockets exist, much less who's building them."

"If there are any such, they'll be European," opined Quinn.

"Then why pester *me* about them?"

"I'm not pestering you."

Armstrong growled: "Dope! Why should *they* pester *me* about them?"

"I give up. The whole world's daffy, anyway."

"They chivvy me—and probably certain other people unknown to me—because they've good reason to believe that they're American rockets!"

Swallowing an invisible lollipop, Quinn voiced his objections in high tones. "Baloney! They could hardly build two more rockets without someone here knowing about it if only as a rumor. Besides, why should they build three, one here and two elsewhere?"

"Somebody here, my little innocent, does know about them. Fothergill does!"

"He denied it."

"Yeah—and I was watching him as he denied it. He knows about them, but he's supposed to keep his trap shut. He also knows that I ought not to know about them. Doubtless he's now wondering how much I've learned and is crediting me with more than I've got. He'll have to take action about that. He'll phone his immediate superiors, or maybe the nearest lair of the F.B.I. if only to cover himself against any suspicions that he talked too much. His mouth said nothing, but his face said plenty. I'll now stake my life that two more rockets are being constructed in secret some place else, and that they're American ones!"

They were passing the shell of the unfinished number eighteen as they made toward the gates. Looking at it beseechingly, Quinn put his hands together as if in prayer.

"Sweet Lulu," he begged of it "get me there ahead of all the competition that's piling up!"

"What've you got against the Moon that you should want to help dump a dollop of loonies on it?"

"As the lady-dog said," Quinn retorted, "if I'm first to trot along the road can I help how many follow me?"

Standing by the gates, he watched his visitor depart, and continued to brood long after the other was out of sight. Finally, he mooched back to the huge column of the rocket.

He addressed it like an aborigine addressing his metal god.

"Men have been killed because of you, and more may yet be rubbed out. It wouldn't be so bad if you didn't just sit impassively on your rear end and stare at the sky as if next century were soon enough. I may not live that long, even if I die naturally—and according to that big clunker, plenty of people are dying unnaturally." He spat in its general direction. "The earlier you blast off and get me there, the better it'll be for you and me and a good many more besides."

XII.

Back in New York, Armstrong phoned the *Herald*, made contact with Norton.

In the screen, the scribe greeted him with a mock scowl. "So you vanish for a couple of days, and now your conscience tells you to give yourself up."

"What are you talking about?"

"You're wanted," Norton informed with relish. "I lent my bed to a fugitive from justice—which makes me guilty of compounding a felony or some such devilment. I won't forget that. You always were a pal!"

Armstrong said, pleasantly: "If you weren't safe at the other end of a phone line, I'd wring your unwashed neck. Come out with the news, in plain language."

"My, my! Murderous threats!" He bugged his eyes in horror and jiggled the stud of his phone. "Were you listening-in to that, Blondie? If so, you're a witness!"

"Good-by!" Armstrong bawled at him, making to cut off.

Semaphoring frantically, Norton yipped: "Wait a minute. What's your hurry?"

"You fail to amuse. If you've anything to say that makes sense, then say it."

"So that's how you are—liverish again? Oh, well—" He scratched his head wearily. "The police are looking for you and Hansen so's they can formally tie up the case of four stiffs. They can't do it without official evidence from both of you, signed statements or some such red tape. The F.B.I. want to know why you've both chosen to disappear at such a juncture. They can't make up their minds whether you've lammed or not. Pretty soon they'll start dragging the East River for you. A smoothie named Carson contacted me yesterday and cross-examined me regarding your possible whereabouts."

"Carson, Carson?" Armstrong searched his mind. "Don't know him."

"Said he was Randolph K. Lindle's aid-de-camp, whatever that may mean. He acted like your carcass was worth a million smackers to this Lindle who, I presume, runs a freak show. Of course, I wasn't able to tell him anything except that with luck you might be in the crematorium." Finishing the scratching, he began to run his fingers through his dark hair, making it stick up in puckish spikes. "A little later, Ed Drake phoned to

ask if I knew where you were. He said some guy like a frustrated vivisectionist had been worrying him for the information. Ed seemed apprehensive for some reason; he thought maybe you'd gone the same way as Clark Marshall."

"Perhaps I have," said Armstrong, calmly. "Next time I talk to you it may be via a Ouija board."

"What with one thing and another," continued Norton, completely missing the point, "I decided to *cherchez la femme*. So I called up your heart-throb."

"Claire?"

"Yep. She seemed to think most of New York was after you. She said I was the seventh in the queue that afternoon. Six others had been on before me, asking the same questions."

"What else did she tell you?"

Norton glanced slowly and apprehensively to both sides before saying, "That just between ourselves, you were the Albany hatchet murderer and she was hiding you in her cellar." His face went sour. "Just like a dame. Knows nothing, and tells lies about it." Feeling in his vest pocket, he took out a slip of paper. "There was one thing more. Her fourth caller was a dressy blonde who said you were to ring this number." He read it out while Armstrong made a note of it, then added, maliciously, "The charming Claire has a poor opinion of cooing towheads who toss you their numbers."

"Burn that slip. I'll call you again fairly soon." He cut off without giving the other time to argue the matter.

Traveling uptown, he used a booth in Penn Station to try the number. A blonde appeared in his screen. It was Miriam.

She didn't know whether to look relieved because he was still in the land of the living, or annoyed because once more she was in contact with the cause of all the trouble.

"Top of the morning, Goldilocks!" he greeted.

She sniffed disdainfully. "You can call Lexington 501-17 at two o'clock or at four-thirty, promptly. It'll be no use unless you ring dead on time. That's all." Without further ado she severed the connection.

Short and sweet. Evidently she didn't like big, heavy men. Or else she didn't care overmuch for the events which followed in his wake.

After having dinner, he called Lexington 501-17 at precisely two o'clock. A neat little switchboard operator answered him, smiled like a toothpaste ad, plugged him through to an extension when he asked for Hansen.

The agent showed on the screen. "I've been trying to regain touch with you the last couple of days. I suppose you know that half your street is burned down?"

"I was there when it started."

"We'll cut this short," Hansen clipped. "One never knows who's listening to what, these days. Remember where we met after you'd asked me to sing you a lullaby?"

"Yes, I remember."

"Same place in one hour's time. Can you make it?"

"Sure! I'll meet you."

The screen blanked. Evidently Hansen no longer was prepared to trust even his own mother. He had adopted the flea technique—that of keeping on the hop.

Business was poor at what was an early hour for Longchamps. Arriving exactly at the sixtieth minute, Hansen found Armstrong at a table in the half empty room. The agent had brought someone with him, a dapper individual with pale face and glassy eyes, a sort of sartorial zombie.

Seating himself, Hansen introduced his companion with, "Meet Jake—one of my boys. His other name doesn't matter. Just Jake will do." Armstrong nodded sociably and Jake responded with the cold stare of an imprisoned goldfish as Hansen went on. "I've had to jump out of the office. I've slept in different beds three nights running. The alternative is to sleep on a slab. That sort of caper plays hell with my business connections. How can clients find me if they don't know where I am?"

"You should worry about that while you can't be found by others whose payments won't be in cash!" said Armstrong. "The cops want us too, and the longer we're missing, the more they'll want us."

"Not me they won't."

"Why not?"

"All they require is official evidence. I've mailed them a sworn affidavit."

"Is that sufficient?" Armstrong's brows quirked in surprise.

"It may be in this case. There were police witnesses too, weren't there? My spiel's a mere formality. At least, it will cover me against any future charge of contempt."

"You beat me to it there. I hadn't thought of that stunt. Guess I'd better go swear one myself and mail it in."

Jake chipped in hoarsely with: "Whenna we going ta drink?"

"They're coming up now," Armstrong soothed. "I ordered before you arrived." He studied the marbles Jake used for eyes, and added, "Doubles."

"Hokay," said Jake.

Impatiently, Hansen put in. "Take no notice of this booze-lapper. I employ him because I'm weak." His lean face was serious as he looked at Armstrong. "Remember Pete?"

"Of course."

"He kicked off last night."

"Kicked off? You mean—?" Putting back the tobacco pouch he was taking from his pocket, Armstrong looked at his hands. They were steady. His voice was steady as he asked: "How?"

"He was at home having supper and talking to his wife. Suddenly he stopped talking. He looked at her like he'd never seen her before. Then he slid under the table. He was out of this world by the time they got the doctor to him."

"Just when was that?"

"Around midnight. I heard of it this morning."

"Was there anything wrong with

him, anything from which he had been suffering a long time?"

"Not that I know about—he appeared to have the constitution of a prize bull." The drinks came up; Hansen handled his as if it failed to interest him. "Maybe it's sheer coincidence. Or maybe it's not. We'll gain a better idea when we learn what brought him down."

"I know what you're thinking."

"Yeah—who's next?"

Armstrong nodded solemnly. "You or me. Companions of the deathwatch. Skiddin' with my shiver-kid!"

"I'm nobody's shiver-kid." Hansen sipped his drink without tasting it. "You got us into this fix. It's up to you to think a way out." He regarded the other levelly. "Spending the rest of my life keeping clear of homicidal maniacs isn't my idea of fun. Something will have to be done about it. You dumped them on our tails—see if you can get them off."

Placing a nickel on the table between them, Armstrong said: "There's one solution."

"How come?"

"So long as we race around too fast for them to catch us, so long are we unable to catch them. I blotted two of them myself, by the simple process of squatting enticingly in the middle of the target. I'm not averse to trying it again." He poked the coin nearer to Hansen. "One of us can sit tight where he's sure to be found. The other sticks around with the boys in readiness to trap the trappers. Toss you for it."

"Is that all you can think of?" Hansen showed his disgust.

"No—but it will provide the action for which you crave."

"This stuff ain't any peppier for being dished out in a snootery," opined Jake, putting down his empty glass. "I drunk better along the waterfront." Raising his voice, he yelled across the room, "Hey, you! T'ree again!" His marble eyes stared stonily at Hansen as if defying that worthy to comment.

Frowning his displeasure, Hansen ignored him, said to Armstrong: "I don't object to becoming the bleating lamb in the lion pit as a last, desperate resource. What else can you offer?"

"Some routine work. Go see Claire Mandle and get a list of the people who've been questioning her about me, find out what you can about them. After that, make contact with a guy named Carson, at the Norman Club, see if you can discover how badly he wants me, and why. Tell him I've gone by plane to Nicaragua but you can catch me immediately I return. Probably he'll clam up. If he does prove talkative—which is most unlikely—dig out any information he can give you regarding this other mob which is gunning for us."

"Why Nicaragua?" Hansen inquired.

"Oh, tell him that's where rocket number nineteen is being built."

Hansen's jaw dropped. "How'd you learn that?"

"I haven't learned it. I invented

the fact. It's being constructed in Poona, Pekin or Poughkeepsie for all I know. Nicaragua will be good enough for this Carson, if he asks."

Shrugging, Hansen said: "All right. Anything to keep busy. Just for the book, what are you going to do in the meantime, and how are we going to make contact again?"

"I'll tell you." His voice lowered. "Lindle and Womersley whipped up senatorial opposition to further rocket expenditure. Ten to one most of their following consists of political representatives of the Norman Club. But more dough was granted despite them. Why?"

"You tell me."

"Because the crowd in favor of rockets temporarily proved the stronger. They want the Moon and they intend to get it. They're going my way! They've enough political pull, if only for the moment. So they are powerful allies, unless—"

"Unless they're adherents of this gang of crazy coots who're after our skins," Hansen finished for him. "In which case your attempt to interview them will be as useful as sticking your noggin under a guillotine."

"That's a chance I've got to take."

"Do you want any flowers?"

"Neither flowers nor music. Just a plain, cheap funeral without

any fuss." He grinned at the other. "If I dared to admit that I'd like a bouquet or two, you'd present me with the bill right now."

"I'm not *that* tight-fisted," Hansen complained.

"Now me, I'll take you up on that." Jake shoved his empty glass toward the agent. "It's your turn, ain't it? Come on—divvy up!"

Looking pained, Hansen repeated their order.

"I'm going to fish around," Armstrong went on. "I'm going to Washington, and I'll call Miriam on Saturday, at five o'clock. Leave any message with her."

"That's no use. Miriam's hopping around like a scared kangaroo."

"Darn!" Armstrong thought a moment. "When I return I'll give a number to Norton, at the *Herald*. Ask him for it."

"I guess that will do." Arising, Hansen snapped at Jake, "Come on, Tosspot—we're back in working hours."

"Suits me. I get tired of leaning on things." Swigging the last of his drink, he gave Armstrong the glass-eye. "Nice meeting you."

The pair departed, Hansen first, Jake following close behind. Armstrong gave them five minutes to get clear. He had a cautious look around the room before he made for the exit.

A comprehensive report of the debate on rocket expenditure was in the library's file of the Washington *Record*. It showed that the argument had been more prolonged and bitter than other press stories had indicated. Elsewhere, for unknown reasons, the debate had been played down.

Lindle and Womersley and their redoubtable following had almost succeeded in forcing a cut calculated to put an end to construction for a long time to come, and those in favor of getting on with the job had gained victory only by the skin of their teeth. It had been touch and go.

Armstrong examined the report carefully, even the smallest details. This was where he must employ his knowledge of psychology to the utmost, analyzing the speeches of those whose aims appeared to parallel his own and, as far as possible, determining the real motives behind them. Double trouble would be his reward for approaching some pro-rocket nut animated by delusions of Martianism. How could one divine from speeches the secret thoughts of the speechmakers? It was well-nigh impossible, but it had to be attempted.

Three times he absorbed the data, determined to miss nothing. This senatorial flare-up was startling evidence of how much more crazily complicated the always complicated world situation had become. Had it been possible to view the picture in plain, straightforward blacks and whites it would have been easy to get the hang of it. But it was far from being a simple case of these individuals on this side and those on that, every person being readily classifiable as in one camp or the other. On the contrary, it was an opposition of uneasy alliances. Any

two of these political figures might be in momentary harmony from totally different motives.

Desperately trying to prevent or at least delay space-conquest were Lindle and Womersley and their supporting cohorts in or out of government. Probably the majority of these conceived themselves as the little flock, the nation's elect, the world's elite, the sane ones of Earth, and were as fanatically pro-Martian as any Shintoist is pro-Mikado. Also there were some — an elusive percentage—who knew nothing and cared less about Lindle's cynical creed, who were quite ignorant of the Norman Club's existence, but who genuinely thought all rocket shots a wicked waste of hard earned money. And, finally, a still smaller percentage of cranks of various sorts, some believing that space ventures were contrary to God's will; some that the cash would be better spent in providing free vitamin pills for destitute Chinese; some that rockets would lead to new colonial adventures breeding new wars; and a few —outwardly the very soul of patriotism but inwardly the opposite —who secretly desired another nation to get there first.

Those vociferously supporting rocket expenditure were fully as motley a mob and animated by as many differing motives. The huge steel interests were well represented, being mindful of juicy profits both present and prospective. And if Sandy-hair's organization had only one quarter of the political connections enjoyed by Lindle's there must be some senatorial voters clinging to the belief that they were deported Martians. The military were in evidence too, for cogent reasons, as also were the mining and chemical interests. Here and there were viewpoints apparently based on old-fashioned forms of jingoism; others who gave support on grounds of the inevitability of Lunar exploration -"America might as well be the first"—others whose support for rocket projects rested on no more than open enmity for certain parties on the opposing side.

How to sort out one from another? How to divide them into the wits, the half-wits and the witless? Or, more accurately, into the square-dealing, the underhand-dealing—and the death-dealing?

Searching through later copies of the *Record* for any further data hidden therein, his eyes opened wide when he scanned the morning edition of two days before. Harvey G. Anderson had led the boosters who wanted the Moon. Harvey G. Anderson had thwarted the Lindle-Womersley combine. Now Anderson was dead! According to the *Record*, he had "passed away unexpectedly but peacefully at the age of sixty-seven." From outside the library, he called the *Record* office.

"I've just heard of the death of Harvey Anderson. Could you tell me the cause?"

The girl at the other end went away from the lens and after a little while a young man appeared in her place. He looked at the caller inquisitively.

"You a friend of Anderson?"

"The dead have no friends."

"No, I suppose not." The young man mulled it a moment, as if it were a profound thought. "He died of heart trouble."

"Can you be more specific?"

The other became impatient. "It was valvular disease of the heart. He'd had it a long time and was liable to drop dead at any moment."

"Who says so?"

"Now see here, mister, I've given you all we've got. If you want to make a fight of it, go argue with Dr. Poynter."

"That's exactly what I wanted to know—who said so," Armstrong pointed out. "Thanks a lot for the information."

"Always glad to oblige," lied the other, slightly miffed.

Returning to the library, he looked through the medical section of the classified directory. There was no Dr. Poynter. This brought him back to the phone. Calling the Medical Center, he inquired about Poynter and would have laid a hundred to one that they'd deny all knowledge of that individual. He'd have lost his money. After keeping him waiting five minutes, they came back with the surprising news that Poynter was a New York physician at present staying with Senator Womersley. He felt his back hairs rising as he left the booth.

Putting this matter aside for future reference, he gave final consideration to his data, decided that of all the weird assortment of political rocket-boosters General Luther Gregory was the most promising prospect. That hoary warrior was obsessed by the military value of Earth's satellite. Whoever controlled the Moon, he had told the senatorial audience for the hundredth time, controlled Earth sufficiently to guarantee survival as a nation. It was a telling point which had been the main urge behind rocket experimentation all over the world, and had kept it going despite sabotage and misfortune. It was an old and oft-told point which lost nothing by its constant repeating. It served admirably to move the masses who were not interested in political wrangling or scientific lectures but did desire to preserve whole skins. Lastly, it was a point which held no hint of crackpot prejudices.

Apart from such occasional performances, General Gregory made no capers on the political stage. His career, his speeches, his personality and his lack of affiliations made him obviously the one—perhaps the only one—motivated by considerations that were sound from Armstrong's viewpoint even if not sane from the viewpoint of Martians or pseudo-Martians. Moreover, he lived in Washington. His home was less than one mile away.

Armstrong was at the general's house within ten minutes.

The old warhorse was pacing restlessly up and down his study, twiddling his visitor's card between thumb and forefinger, his leathery, gray-mustached features authoritative, stern.

Tramping heavy-footed into the

room, Armstrong said: "This is a great favor, general. I hope you won't throw me out before I'm through."

Gregory cast a calculating and approving eye over the other's great bulk. "It's no favor to see me. For forty years I've seen everyone who wanted an interview with me, within the limits of my time, from privates upward. On the whole, it has paid me."

"I'm obliged to you, all the same."

"Never mind that, man. If you've something to say, get it off your chest as quickly as possible."

"Well, general, I've urgent, in fact desperate reasons for inflicting upon you the craziest story you've ever heard. I'll cut it as short as I can to save your time. I ask only one thing of you."

"What may that be?"

"That, having heard it, you don't dismiss it as too absurd to be worthy of consideration. Use all the influence you've got and check the facts before you reach a decision."

"And why does all this concern *me* in particular?"

"Because you've all the authority which I lack."

"So have hundreds of others in this city," declared the general. "Some have more!"

"And because," continued Armstrong, doggedly, "I feel that you would use authority rather than abuse it."

"Oh." He was not flattered. He studied Armstrong as if about to order him to button up his jacket and get a haircut. "Have you approached anyone else before coming to me?"

"No, sir."

General Gregory resumed his pacing up and down the carpet. He glanced at the electric clock, then said: "I have heard plenty of peculiar things in my time, and I doubt whether you can tell me anything queerer. But go ahead—make it as short as you can." He stopped, and his mustache bristled. "All the hosts of heaven won't save you if you end up trying to sell me something!"

Armstrong smiled. "General, have you ever heard of the Norman Club?" He watched the other keenly.

There was no noteworthy reaction. Gregory pondered awhile, said indifferently: "The name sounds faintly familiar, but I can't place it offhand. What of the Norman Club?"

The tale took an hour, during which the general listened without interruption or change of expression. Much encouraged, Armstrong went on, ending the story by detailing his arrival in Washington.

"There you are," he concluded. "The entire world is divided by a secret creed. An invisible empire cuts right across frontiers and oceans, undermining all loyalties, making mock of all flags, menacing every form of national independence. This creed may have no better basis in fact than has Mohammedanism—for which the Mahdi and thousands of his followers gladly surrendered their lives. No better than Hinduism for which

millions have died or are yet to die. It doesn't matter how incredibly ancient its roots may be, whether they be true or false, fact or fancy, it is the modern fanaticism. No longer are we believers or unbelievers. No longer are we either the faithful or the heretics. By virtue of a legendary purge, and by the arbitrary decision of the psychotron, we are now either the sane or the insane!"

The soldier's hard gaze had not shifted from his face during the entire recital. Neither had any expression appeared upon the weather-worn features.

"This is fantastic," he declared. "I'll give you that! Without implying that I think your story untrue, I must say that it is too far-fetched to accept without evidence, considerable evidence! You realize exactly what your account means?"

"I've studied every aspect of it," Armstrong told him.

"It means that you impeach that proportion of the controls running this country."

"And every other country."

"Let's stick to this one. Your yarn means the condemnation of our Intelligence Service, the F.B.I., the police, the National Guard, an incalculable number of the most important people, almost every powerful interest, almost all our channels of information and our means of propaganda. It means that we are not one country, but two!"

"Precisely! The sane and the insane!" He faced the general's steady stare. "As for the Intelligence Service, I don't think it necessarily condemned."

"Why not?"

"Think over the facts: the authorities are building rocket number eighteen down there in New Mexico, getting on with it very slowly, and giving it all the publicity that's going. Meanwhile, they're progressing in secret with two more rockets at other sites. Why should they do that? The answer is obvious. They're satisfied that rockets really are being sabotaged even though they've not been able to identify the culprits. But they've got evidence of sabotage, and the Intelligence Service has provided it. So number eighteen is merely a decoy duck, a bait to attract the saboteurs and draw their attention from what is happening elsewhere.

"Go on."

Wagging an emphatic finger, Armstrong said: "The idea was a good one. It might have worked. But it didn't. Somebody has discovered that they're being fooled. That means that somebody else among the higher-ups has been a blabbermouth. Sandy-hair and his regiment of so-called Martian deportees know of these other rockets and would skin me if it would get them the details. Ten to one the Norman Club also knows about them. Ten to one they've got all the dirt, location included. Unless we can find some way to jump on the entire crowd those two rockets will go to blazes exactly as have all the others!"

"You've dumped a red-hot one in

my lap!" Gregory started his to and fro marching again. "Naturally, I'm skeptical about all this. But if it's only half true, it's bad enough!" He pulled worriedly at his mustache. "It comes at a time when there's trouble enough already."

"Trouble?"

Gregory faced him squarely, legs braced apart. "The news will be out this afternoon, in the four o'clock editions, and on the radio-vision circuits. Russia has announced the result of her investigation of that atomic plant disaster in the Urals. She says the job was fixed by Russian-speaking Germans whom she accuses of being members of the revived Illuminati, subsidized by France. Some hard words are being said behind the scenes, and the international situation is deteriorating rapidly."

A chill ran down Armstrong's spine. He glanced at the clock. "It has gone four now."

Crossing to his television receiver, Gregory switched it on. The big screen flooded with light, revealed an announcer gabbling away as fast as he could go.

". . . confessed to receiving the detonating apparatus at the Polska Hotel, Warsaw, from one Aristides Duquesne, a citizen of France. The French Government has denied all knowledge of this individual. In an interview given this morning, Monsieur Jules Lefevre, Minister of Defense, declared that France has no reason to interfere with the scientific progress of a country with whom she has a pact of alliance, and that any suggestion to the contrary must be rejected most energetically. He also denied that France has encouraged a revival of the German Illuminati."

For the first time, General Gregory sat down. Leaning back in his chair, he toyed with his mustache while the announcer continued to talk fast.

"The French Government has invited the Russian Government to place its evidence before a committee of the United Nations, and a reply is now awaited. Meanwhile, the cross-examination of Mihael Kihrov and his fellow conspirators continues in Moscow." He paused for breath, then went on. "In an official announcement given by the War Office today, the British state that the annual large-scale maneuvers of their Territorial Army will for the first time be held on French soil. This is in accordance with Franco-British military agreements made last year."

Switching off, Gregory said, coolly: "There are other items not yet to be made public. They are significant and menacing. You can take it from me that the world is lucky to be still at peace—and it is problematical how much longer peace can be maintained."

"Which means that if war should break out, all building of Moon-rockets will cease, here and everywhere else?"

"Of course! Everyone will be too busy struggling for survival to bother about such matters." His hand massaged his chin thought-

fully. "How does all this look to you in the light of this Norman Club business?"

"It's a picture we'd have the devil's own job persuading anyone to see—and the Norman Club knows it! Years of cunning propaganda have instilled deep-rooted prejudices in the masses of both sides, and those prejudices will blind them to the truth. As I see it, Russian members of the Norman Club are working with French members to stir up a third world war and thus set things back by at least a couple of decades. If they succeed, their fellow members in every other country will do their darnedest to spread the conflagration and make it last as long as possible. They've done it twice before—and they can do it again, maybe. But on the two previous occasions they didn't go far enough."

"What d'you mean?"

"Anxious not to wreck this planet completely, they called off the wardogs before it became too late. They blundered there, for while those wars retarded the whole world sociologically, they gave it an immense boost scientifically. You and I and everyone else knows that it was the last worldwide free-for-all which caused a mighty jump in progress with rockets, apart from other items." He stared moodily at the blank screen. "They'll have learned their lesson from that! It'll be different next time. They'll make a proper job of it—if they can. They'll carry it through to the bitter end when all the results of accelerated scientific progress are

From a review in last month's
ASTOUNDING SCIENCE-FICTION

"If you are at all a connoisseur of fantasy, get

THE Well OF THE Unicorn

By GEORGE U. FLETCHER

"First class fantasy by a well-known writer who has also done science-fiction. Like *The Worm Ouroboros*, to whose genre it belongs, it is laid in a wholly imaginary world, a world of knights and magic, wars and piracies . . . But THE WELL OF THE UNICORN is much more than a fantasy of color, movement, and conflict. In it you will find argued out such questions as how man can fight for freedom without losing that freedom in the process. Colorful and fast-moving."

—L. Sprague de Camp

☛ *FREE EXAMINATION:* Readers of ASTOUNDING SCIENCE-FICTION may examine this book for 10 days at our risk. If not completely satisfied, return it for full refund of purchase price. Mail this coupon now.

William Sloane Associates, Inc.
119 W. 57 St., N. Y. 19
Enclosed find $.....for.....
copy(ies) of THE WELL OF THE UNICORN @ $3.50.
Name .....
Address.....
City..... Zone..... State.....
☐ Send C.O.D. I will pay postage.
AS

dust among the ruins, when surviving members of the Norman Club have the only remaining guns and the rest of the world's scattered tribes have bows and arrows. They're maniacs, I tell you—maniacs with delusions of sanity!"

"Well, your obvious sincerity impresses me as much as your story," Gregory observed, candidly. "So I'm going to make some pointed inquiries of my own before committing myself one way or the other. Can you see me again this time tomorrow?"

"I can." Armstrong prepared to leave. "I suppose you've got a record of this conversation?"

Gregory pointed to a wall stud. He was a little apologetic as he spoke. "That controls a Blattnerphone in the next room. All your talk is held there in a reel of wire. You will understand that—"

"I understand perfectly," Armstrong chipped in. "In your position, I'd record every unknown petitioner. It's a wise precaution."

The general looked grateful as he showed his visitor out.

Walking rapidly down the street, Armstrong reviewed the conversation. How far had it got him? Even supposing that he became convinced, how much could the general do, what could he achieve?

Fat, black thunderheads were rolling over the Potomac. They seemed symbolic of the international situation. The few passers-by reflected the morbid atmosphere, they were quiet, serious, preoccupied. If all the knights and bishops on fifty chessboards combined in phony opposition could they clear the boards of all other major pieces, leaving only a few futile pawns?

Large raindrops began to fall squashily. A ragged line flashed blue and brilliant over the darkening horizon. There followed the sound of clouds being ripped apart.

Taking shelter in an arcade, he waited for the downpour to pass. The window by his elbow was that of a recorder-agent; it held a display of simple press-sheet reproducers like his own, and a few dual-purpose television models like Gregory's. The demonstration model in the foreground was of the former type, and switched on, its screen filled with the front page of the Washington *Post*.

Woe, woe was the theme-song of this page. It is said that France was about to order five classes to the colors. It is said that Russia has withheld certain secrets of bacteriological warfare from the United Nations Disarmament Commission. It is said that a new and still more powerful Germany was waiting to arise—unless America stepped in to prevent it. It is said that the British are demanding cancellation of certain clauses in their treaty with Egypt. The Washington *Post* omitted to mention by whom these things were said, neither did it bother to identify the mysterious "official circles" whom it quoted. The general effect was the same regardless of whether the cause was fact or fancy—it conditioned the minds of the mob in readiness for the coming storm.

His brow was as thunderous as the sky above as his eyes sought less important items in the right-hand column.

ROCKET PILOT WANTED FOR MURDER.

Gallup, N.M. Local police are seeking George Quinn, official pilot of R.18 now under construction fifty miles to the north. Quinn is alleged to have slain Ambrose Fothergill, technical director of the rocket site, after a heated argument.

Armstrong's big hands clenched, his fingers curling and digging into the palms. He had no chance to absorb this news fully, for his gaze involuntarily wandered on and discovered another item.

WOMAN SCIENTIST VANISHES.

Tarrytown, N.Y. Claire Mandle, physicist sister of the late Professor Robert Mandle, disappeared from her home this morning in circumstances said to be mysterious. Herbert Walthall, F.B.I. agent, admits that his organization is now looking for Miss Mandle, but says that no information can be given at present.

Disregarding the rain, the thunder, the streaks of blue fire flashing continually, Armstrong whirled into the street and began to run.

TO BE CONCLUDED

BRASS TACKS

The Canadian Government feels it needs machine tools more than science fiction, so saves its dollars for that purpose.

Dear Mr. Campbell:

Recently, I happened to reread the article written by "Arthur McCann" in your December, 1943, issue, on the future of such microbiological food cultures as edible yeasts, and I was struck anew by its timeliness even at present. With the world population swelling steadily, it becomes obvious that agriculture will, probably in our lifetimes, be unable to sustain such numbers of people. (Of course, this anticipates no atomic war.) It is only by seeking such artificial mass-production techniques as culturing of food-yeasts, that we may hope to keep old Malthus' grim solution at bay.

But the other day, I ran into another very promising development which, if it comes off, may well prove the greatest boon yet to the malnutritioned majority of the world's people. The basis of the idea is simple: that, even though we cannot make our own vitamins, they can be manufactured for us by the bacteria of the intestine, and absorbed by us, the hosts, through the intestinal walls. This phenomenon is often seen in laboratory animals—(it is called the process of "refection")—we cannot, for instance, get Vitamin-E deficiency very easily in the rabbit, no matter what kind of a diet we give it, because its intestinal bacteria make the substance for it. Similarly, cattle have practically all their vitamins derived from refection. However, we humans are rather deficient in it.

Last year, though, news was published of an experiment in England. The British workers were trying to bring about an artificial deficiency in Vitamin B1—thiamine—in order to produce beri-beri. Of the group of ten volunteers, however, only five got the deficiency—the other five, it was found, were getting the vitamin by refection. The experi-

menters managed to end this annoying resistance by dosing the "immunes" with sulfa drugs, which killed the bacteria responsible.

From the nutritionists' standpoint, the reverse is immediately suggested: deliberately "infecting" people with these bacteria in order to prevent or cure vitamin deficiencies. In the Orient, thiamine-synthesizing bacteria might reduce or wipe out the incidence of beriberi. Right here in North America, niacin-synthesizing strains might do a similar job on the incidence of pellagra in the southern states. And so on.

The importance of such a method over the present ones of better diet and/or vitamin supplementation of the diet, is economic. It's much easier to give a person a "disease" —and much less expensive—than to improve the entire diet or give a course of medication. And as the world's population rolls on to three, four, five billions, and up, that will become increasingly important. There may be enough staple, basic foodstuffs, such as wheat, to go around, but it is certain that there won't be enough, anywhere near enough, milk, eggs, fresh fruits, et cetera. And chemical methods in industry are too expensive to produce the vitamins for everyone. But if we can simply set up vitamin factories of bacteria in the digestive tracts of each person, there will be no need to "vary the diet" in that fashion.

Of course, there is the technical question of isolating and developing bacterial strains to do the job, and of learning how to "infect" people efficiently and successfully. But it's a thought, anyway.

Before I finish, I'd like to ask you what the score is on Canadian subscriptions. I understand that they are no longer being taken, even when paid in United States funds. Is this because the Canadian government has issued a fiat to publishers against any sort of subscriptions whatsoever, or are you clearing the decks for a Canadian edition to ASF? I'm asking this not only for myself, but also on behalf of a group of twenty members—all of whom prefer ASF to practically any other magazine. Please let us know, will you?—M. Diner. 445 Mt. Pleasant Avenue, Westmount. Montreal 16, Quebec, Canada.

I suppose we're bound to run up against title duplication sooner or later!

Dear Mr. Campbell:

At last it has happened; I have found a use for my ill-kept file of Astounding's titles, plots and authors! Permit me a small calooh, and perhaps a callay or two on this most frabjous day.

Did or did not the noble magazine run a serial, beginning August, 1936, entitled "The Incredible Invasion"? Right the first time! And here it happens again in March, 1948. Sir, I will have you know that twelve years is a mere nothing to the elephantine memory of the average science fictionist. I have

heard of magazines stealing stuff from one another, but this business of robbing Astounding to pay Astounding is pretty steep! It might have its compensations, though. I should like to see what Heinlein could do with "Slan", say, and E. E. Smith with "Waldo".

It was right neighborly of you, though, to run a story by Murray Leinster in this last issue seeing as how he wrote the original draft of "The Incredible Invasion".

As for the rest of the magazine, ". . . And Searching Mind" seems to promise much more than its forerunner "With Folded Hands . . ." did. I shall look forward eagerly to the next installments.

Mr. Asimov's scholarly article on thiotimoline has created quite a stir in engineering circles here at the University of Wisconsin, which I am currently attending. One of the brighter lights in the chemical engineering department has devised a paste consisting of thiotimoline, calcium chloride, and chewing gum which is administered orally shortly before going on a prolonged drinking party. By the use of this paste it is possible to experience the soothing sensation of a stiff drink without the arduous necessity of first lifting a glass to the lips and swallowing. The $CaCl_2$, of course, dehydrates the thiotimoline in time for the next shot. Best results have been obtained with beer. Our data on whiskey is pitifully inaccurate, due to the varying proportions of water in the local supply.

If it seems desirable, I shall be delighted to furnish you with details of the mechanical time annihilator which has been developed here at the U. W. This machine is the direct result of research by the staff of the *Wisconsin Engineer* magazine. The original work was done for the purpose of making a time machine which would enable the editorial staff to get copy to the printers on time every month. Due to the number of paradoxes encountered, it was found inadvisable to construct the original model, but a solution was worked out along the same principles. Instead of creating a section of hypertime in which to travel back and forth, we merely annihilate a portion of the normal time-stream.

With this mechanical time-waster, then, to do our procrastinating for us, we find we have enough spare moments to get the magazine out regularly.—Hugh R. Wahlin, 137 N. Prospect Avenue, Madison, 5, Wisconsin.

I understand you just can't outfox it!

Dear Mr. Campbell:

Accept my appreciation for the excellent article by Isaac Asimov on the extra or endochronologic properties of thiotimoline. It is surprising that such an important phenomenon had not been publicized adequately until now, particularly in view of the philosophical implications.

From the use made of the first person plural in the article it is clear that Mr. Asimov is involved

in the research, so I wish to make some suggestions that perhaps you could pass to him later.

First, I would suggest that ultra high speed motion pictures be taken of the process of endochronic solution of the crystal. This might answer some questions now outstanding and raise new ones. The pictures would also have a by-product publicity value.

It was remarked that the endochronic solution never takes place unless the solvent is to be ultimately added; but it was also implied at that point that this limitation had been observed only in the case of manual operation of the experiment and with reference to the state of mind or volition of the human operator. It seems to have been taken for granted that a machine must inevitably perform a given function and with a given time lag; and that the machine must be hand-triggered. Perhaps the experimenters have had little to do with such devices as tilt boxes, and the little steel balls that go erratically on their way to glorious or ignominious destinations. Accordingly, I suggest, secondly, that the endochronometer be redesigned to provide randomly timed bursts of water to one of several isolated crystals chosen at random by the one of several available paths taken by the Randomly timed bursts of water. The burst itself could occupy a negligible time, in the order of microseconds; or the flux of the water could be slowed to a crawl and any interesting observations noted and interpreted. Also, even after a path has been chosen

SCIENCE FICTION BOOKS & BACK-DATED MAGS.

Fantastic and science-fiction books and back-dated magazines (Astounding, Unknown, etc.) bought and sold. Lowest prices. List free, of several thousand items. Current top-sellers:

The Books of Charles Fort, by Charles Fort. Contains complete contents of Lo, New Lands, Wild Talents, and Book of the Damned. Non-fiction, four full-length books in one huge volume. About visitants we've had from space, teleportation, etc., $5.00

33 Sardonics I Can't Forget, by Tiffany Thayer. Strange shorts gathered by the Secretary of the Fortean Society (see Fort above), $3.40

Deliver Me From Eva, by Paul Bailey. Superman yarn, $1.90

The Vicarion, by G. Hunting. Machine Sees the Past, $1.90

The Vengeance of Gwa, by S. Fowler Wright. 10,000 years hence; sold everywhere for $10.00 while out of print, now reprinted, $3.90

Send check or Money-Order to:

WEREWOLF BOOKSHOP 1508-G Riverside Drive Verona, Pa.

that might lead to one particular crystal, a blocking mechanism might or might not suddenly intervene, depending upon the turn of the wheel of fortune—so to speak—and divert the water from the crystal at the last moment. If perchance, the crystal might find itself out on a limb, having liquefied in anticipation of the event that failed to occur; it is not clear to me why this should be in contravention to the law of conservation of mass-energy. The energy required for the spontaneous mistaken action of the crystal might be drawn from the arrested kinematics of the solvent's mass.

Third, it is barely possible, although from the data given, extremely unlikely, that the process is started by a field of force or radiation from the approaching solvent, or that the crystal sends out radar impulses whose reflections inform it of what to expect. Ionization would affect the field strength or the radar action.

Fourth, I would suggest that the experiments be performed with a minute and then with a very large quantity of thiotimoline. There may be quantum considerations involved here that would show up in the case of minute quantities.

Fifth, the data should be correlated, if such correlation is possible with the velocity or kinetic energy of a plateau mass of approaching water. In such work, the flux should be reduced to a measurable speed.

Sixth, if kinetic, field, or other mechanistic explanations break down and the crystal be credited with the property of adjusting itself to an inevitable event before actual occurrence of that event, then it must be concluded that inevitable events are part of the total reality of nature, despite the so-called uncertainty principle now popular.

The analogy between the action of this substance and certain observed instances of trivial prophecy, such as in ordinary dreams, is quite plain to anyone who has experienced dreams of that sort. It would also be well to re-examine all the data on telepathy and clairvoyance so as to find out whether any future verification of the visions or decisions has any effect upon the immediate validity of the visions. That is to say—if the truth or falsehood of the vision is forever concealed from the person having them—although made known to other observers—would the person still have those visions?—Aaron B. Miller, 3230 Steuben Avenue, Bronx 67, New York, N. Y.

Sorry—LiH is an atomic explosive. The Cockroft-Walton experiment shows that 150,000 volt protons cause Li to fission just as thermal neutrons fission U-235. The energy yield is about 2.5 times that of U-235, pound for pound. But it takes U-235 to excite LiH sufficiently to set it off—just as it takes a violent primer like tetryl to set off ammonium nitrate. The low energy efficiency of the lab experiment with Li and H results from small percentage of successful hits. If the Li and H are raised to such a temperature that

the average thermal energy equals the necessary bombardment energy, the reaction becomes efficient.

Dear Editor Campbell:

You are fortunate in having the "New Williamson" to take up a little of the space left by the departure of Heinlein for the slicks. "... And Searching Mind" is really entertaining and provoking. As McSherry points out, the new twist on the familiar "Legion" type epic is more than welcome. I've been arguing with myself pleasantly for quite a while now trying to set up plausible grounds for Ironsmith's behavior, attitude and above all, special immunity. It does seem to me, however, that the humanoids would run into trouble with such matters as childbirth, cancer, diseases, et cetera. Thus, from the brief glimpse we get, it seems that a melancholy, depressed person would be apt to get a more or less automatic euphoride treatment. Yet the symptoms might be due merely to the onset of an organic disease of some kind which could respond to medical treatment. Under euphoride, the patient would no longer complain, but it seems reasonable to assume the disease would proceed until the patient died. The medical service of the humanoids would appear to violate the Prime Directive.

Allow me to protest against the notion of A. Bertram Chandler that lithium hydride is an atomic explosive. Rubbish. LiH is a perfectly good crystalline compound

GOOD NEWS! Here's a New, Economy-Way to Your Favorite Reading Pleasure!
EXCLUSIVE IMPORTED and BEST SELLING ASTOUNDING ADVENTURE WEIRD SCIENCE-FICTION, FANTASY BOOKS OF YOUR CHOICE YOU'LL THRILL TO!
BONUS BOOKS OF YOUR CHOICE
WRITE TODAY! Receive FREE illustrated catalogue of books and services of America's exclusive readers' service. Fourteen years of continuous experience assures satisfaction.
LEARN HOW YOU RECEIVE FREE BONUS BOOKS OF YOUR CHOICE! See how the cost of your FAVORITE reading pleasure is cut to the core with this efficient profit sharing plan! Get our FREE Bonus Book Box!
50. THE VICARION
By Gardner Hunting
A truly great story of science-fiction concerning a fantastic invention that could have ruled the world! (Originally published at $2.00.)
NOW $1.00
15. STRANGE SUPERSTITIONS AND MAGICAL PRACTICES
By William Fielding
Authentic and fascinating stories of man's customs and folklore. Learn about beliefs in black magic, witchcraft, taboo, etc. that exist today! Original publication.
PRICE $1.00
79. WHOM THE GODS DESTROY
By Alfred G. Bennett
Into the mysterious Himalayas he went to tempt fate—and the sinister powers of the Gods! A vivid and stirring story of Oriental fantasy and weirdness. (English publication.) Paper cover.
PRICE 60c
19. WARRIOR OF THE DAWN
By Howard Browne
A thrill-packed story of Thorn, the great prehistoric warrior, starting out to avenge a jungle raid on his tribe. (Originally published at $2.00.)
NOW $1.00
95. PAUSE TO WONDER
Edited by Fischer & Humphries
Stories of the MARVELOUS, MYSTERIOUS and STRANGE! 66 authors! 82 stories! Fresh material by known writers as well as some exciting new discoveries. 565 pages of THRILLS. (Originally published at $3.00.)
NOW $1.00
ACT NOW
MAIL COUPON NOW
READER'S SERVICE BOOK CLUB
Department B, San Jose, California
RUSH Circled Books: 50 15 79 19 95
To: Name
Address
City State
Cash C.O.D.
FREE! WRITE TODAY! Get your illustrated catalogue and book lists. Learn how you will save reading dollars while doubling your particular reading pleasure! HURRY! Write Now!
The Reader's Service Book Club
119 E. SAN FERNANDO ST. SAN JOSE 21, CALIFORNIA

which can be melted over a Bunsen burner (MP 680°) without danger. Added to water, solid LiH reacts to evolve hydrogen and form LiOH. It is no more an atomic explosive than, say, NaCl. However, I think I do know what misled Chandler down this false trail. Evidently he was relying on a foggy recollection of Cockcroft & Walton's 1932 experiments in which Lithium metal targets were bombarded with high energy protons. In an extremely small number of cases they succeeded in bringing about the transformation Li plus H^+ equals 2 He, in which the loss of mass (0.0183 g/g.atom) appears as energy in the form of penetrating radiation. The energy so obtained is much less than that put into the proton beam, due to the extremely low efficiency of the conversion process, so that even this isn't very practical.

As you can guess, I rate Williamson 1 for the issue. At 2 is Mail from Mira. At 3 we can take He Walked Around the Horses, though it isn't much—after all, since "Sidewise in Time" I've encountered this idea yearly or so. Padgett can have 4th place, and I will somewhat reluctantly vote Tenn into 5th, though there isn't much to his tale. —Russell Chauvenet, Brandon Avenue, Charlottesville, Virginia.

Let's just say liquid oxygen is a bit tricky to work with.

Dear Mr. Campbell:

I hate to see a writer jumped on and pounded to a pulp for minor errors, but when he becomes the victim of a popular misconception and unwittingly perpetuates it I do think he should be set aright swiftly, gently and with as little damage to his dignity as possible.

This particular misconception has been popular ever since the early thirties when it became known that a Mr. Ley and friends in Germany and Robert Goddard in America were using liquid oxygen in bi-liquid propellant rocket experiments. The same was re-stated, succinctly and with improvements, in the March number by L. Sprague de Camp when he said, "Moreover liquid oxygen is a dangerous material to handle; hydrocarbons like lubricating oil explode on contact with it as for that matter they do on contact with pure oxygen gas."

In the first place, liquid oxygen is about as dangerous to handle as so much hot water, and in the second place, we of the Pacific Rocket Society wish very fervently that it would cause hydrocarbons to ignite spontaneously on contact. Mr. de Camp should have qualified his statement somewhat as follows: Liquid oxygen can be a dangerous material when ignorantly or carelessly handled, and the vapor may cause hydrocarbons to explode spontaneously upon contact at ordinary temperatures *if* the pressure is high enough.

Those of us who have been active in the Pacific Rocket Society's experimental program have learned from several years experience in transporting, storing and loading quantities of liquid oxygen that the

stuff has been grossly overrated as a source of hazard to rocket men and "space hounds". True enough, it has a high vapor pressure and must be stored in vented containers, but beyond that liquid oxygen is as easy to handle as hot water and safer than gasoline.

We have had no liquid oxygen accidents, but the following things could happen to a moron if you gave him a can of the stuff to play with:

a. Brittle frost bite or severe cold "burn" resulting from experimental immersion of fingers et cetera in the liquid. (The affected members may be broken off like candy sticks, but replacement is difficult.)

b. Fragmentation and dispersion of container by vapor pressure resulting from extended closure of vent. (Extent of damage depends on strength of container not on I.Q. of moron.)

c. External oxy-moron combustion resulting from saturation of clothing with vapor and inquisitive contact with flame or spark. (A definite improvement on the hot foot, if you want a good laugh.)

Stored in a well insulated container a few liters of liquid oxygen will rest quietly for weeks, even in warm surroundings; slow evaporation keeps the bulk of the liquid cooled well below its boiling point —297 deg. F. Under the conditions of use envisioned by Mr. de Camp, as a source of oxygen for a spacesuit, a tank of the compressed gas would be most im-

SEND ME 1 to 6 TIES YOU'RE TIRED OF!

I'LL SEND YOU SAME NUMBER DIFFERENT TIES

MY DEAL IS UNBEATABLE! READ HOW IT WORKS . . .

Send us one to six ties you're tired of. Check your preference and fill out coupon below. Send it to us with one to six ties, new or old, clean or dirty. We will send you the same number ties of your preference, of equal quality, neatly cleaned and pressed . . . all you do is to pay the postman just $1.00 plus postage.

TYTRADE
P. O. Box 53, Berkeley 4, Calif.

Rush me same number of ties (1 to 6) as are enclosed. I have checked my preference below. I will pay postman $1.00 plus postage.

NAME.....

Address.....

City.....State.....

Check your tie preference
☐ Conservative ☐ Flashy ☐ Average

practical for at least two reasons. One, it would be very uneconomical to haul compressed oxygen in a spaceship. Two, the compressed gas, if shielded from direct sunlight or other heat source for any length of time, would quickly lose its heat by radiation to dark space, first liquefying and then freezing solid and becoming completely inert. One likely method of providing a spacesuit with an independent supply of oxygen involves the use of an insulated liquid container equipped with a small heat exchanger regulated to vaporize the liquid oxygen at the rate required by the occupant's lungs. The exhaled breath might easily be the source of heat for this purpose, facilitating automatic regulation thereby. It seems more probable, however, that spacesuits of the early interplanetary era will carry independent oxygen supplies for emergency use only, depending upon the ship's many auxiliary tanks for a working supply piped through umbilical cords from numerous internal and external outlets. I for one would not care to float out of an air lock in mid-orbit without being firmly attached to the vessel by some trustworthy means, such as an umbilical cord or two or three and a six-inch steel hawser.

By the way, I am amazed at Mr. Asimov's chemical erudition. The patience and fortitude revealed in his well documented research on thiotimoline are no less remarkable for the fact that he overlooked an obscure but basic source, namely—Kleinstunkle's "Stasis in a Continuum of Negative Dimensions" (1946), the chapter on *Ordichronic Singularities*, p. 122. Here Kleinstunkle's exhaustive analysis substantiates most of Asimov's work and goes on to derive the complete chemical formula of this paradoxical substance. The formula clearly shows that Asimov's tentative conclusion as to the aromatic structure of the hydrocarbon nucleus was most shrewd; it stinketh to high heaven.—E. G. Ewing, Vice president, Pacific Rocket Society, 1130 Fair Oaks Ave., South Pasadena, California.

$_3L_1^7 + {}_1H^1 \rightarrow {}_2He^4 + 18Mev$—or more than twice the energy per pound of $_{92}U^{235}$ fission.

Dear Mr. Campbell:

Willis McNelly's letter in the April Science Fiction has outraged me a little, so I am writing to refute him. He says that non-Euclidian geometries and non-Newtonian physics are very successful and desirable. Now, quoth he, "merely because those things are true, can we then assume that contemporary . . . thought processes . . . should be non-Aristotelian?" The answer is obvious. No. But: The $\bar{N}$ and $\bar{E}$ systems are justified, as he states, by their results. He also "does not doubt the efficacy of the ($\bar{A}$) system." Once that is admitted, then the non-Aristotelian system is as justified as either of the other "non" systems. If something gets results, isn't that reason

enough for employing it? I also suggest that Mr. McNelly reread "Science and Sanity"—assuming, as I must from the tone of his letter, that he has skimmed through it *once*.

1— . . . And Searching Mind, Jack Williamson

2—He Walked Around the Horses, H. Beam Piper

3—Ex Machina, Lewis Padgett

4—New Wings, A. Bertram Chandler

5—The House Dutiful, William Tenn

I wouldn't call the issue exceptionally good. The serial continues, intriguing and imaginative, pretty well written. "He Walks" was very well laid out, well characterized, but somehow, not too exciting. "Ex Machina" was hilarious in places, but hardly reached the standard of the earlier Gallegher stories. "New Wings" was pretty well done, but a rehash; what was this about lithium hydride? The only thing I remember about it is that it is one of the four or five substances with specific heats greater than that of water. The "House Dutiful" suffered mainly from over-gadjeting; if your fairy house is going to do all the work, it doesn't leave much room for ingenuity on the part of the author.

Incidentally, I note no less than three stories in this issue in which some more or less benign entity is running things without too much concern for the feelings of the public at large. Of course, Joe's skrenning and the house's influenc-

SELLS FIRST STORY AT 60

"Since I am crowding threescore, my objective in taking the N.I.A. course was not to become a professional writer. However, while still taking the course, I sent an article to St. Joseph Magazine. It was immediately accepted. Encouraged, I wrote others. Our Navy accepted them and asked for more. All thanks to N.I.A."—Albert N. Hinman, 1937 East Silver Street, Tucson, Arizona.

Why Can't You Write?

It's much simpler than you think!

So many people with the "germ" of writing in them simply can't get started. They suffer from inertia. Or they set up imaginary barriers to taking the first step.

Many are convinced the field is confined to persons gifted with a genius for writing.

Few realize that the great bulk of commercial writing is done by so-called "unknowns." Not only do these thousands of men and women produce most of the fiction published, but countless articles on business affairs, home-making, hobbies, sports, travel, local and club activities, etc., as well.

Such material is in constant demand. Every week thousands of checks for $25, $50 and $100 go out to writers whose latent ability was perhaps no greater than yours.

The Practical Method

Newspaper work demonstrates that the way to learn to write is by writing! Newspaper copy desk editors waste no time on theories or ancient classics. The story is the thing. Every copy "cub" goes through the course of practical criticism—a training that turns out more successful authors than any other experience.

That is why Newspaper Institute of America bases its writing instruction on the Copy Desk Method. It starts and keeps you writing in your own home, on your own time. And upon the very same kind of actual assignments given daily to metropolitan reporters. Thus you learn by doing, not by studying the individual styles of model authors.

Each week your work is analyzed constructively by practical writers, gradually they help to clarify your own distinctive style. Writing soon becomes easy, absorbing. Profitable, too, as you gain the "professional" touch that gets your material accepted by editors. Above all, you can see constant progress week by week as your faults are corrected and your writing ability grows.

Have You Natural Ability?

Our Writing Aptitude Test will reveal whether or not you have natural talent for writing. It will analyze your powers of observation, your imagination and dramatic instinct. You'll enjoy taking this test. There is no cost or obligation. Simply mail the coupon below today. Newspaper Institute of America, One Park Avenue, New York 16, N. Y. (Founded 1925)

VETERANS:— This Course Approved for Veterans' Training

Free

NEWSPAPER INSTITUTE OF AMERICA
One Park Avenue, New York 16, N. Y.

Send me, without cost or obligation your Writing Aptitude Test and further information about writing for profit.

Mr.
Mrs. .....
Miss

Address .....

☐ Check here if you are eligible under the G. I. Bill of Rights.

(All correspondence confidential. No salesmen will call on you.) 36-H-598

Copyright 1948 Newspaper Institute of America.

ing are indirect in their effects, but they can be lumped with the mechanicals of ". . . And Searching Mind" is such a classification.

The cover was outstanding. Alejandro's work is good, but Mira by Bonestell beats him right into the ground. The ordinary ASF work is somewhere not too far below Alejandro. I'm not saying, incidentally, that all covers should be astronomical. The Rogers full page cut of Dawn Hall—p. 153—is also wonderful.—Timothy Orrok, 5 Cleveland Street, Cambridge 38, Massachusetts.

Unquestionably the answer to proper experimental observation of thiotimoline!

Dear Mr. Campbell:

After reading Mr. Asimov's article on the solubility of thiotimoline, I cannot refrain from expressing my surprise that such a distinguished chemist as he should have completely missed the key clue to the behavior of that remarkable compound. Apparently he has overlooked the discussion in the *Journal of Experimental Dyspepsia*. If he had only examined his thiotimoline solution through a crystal ball, the problem would have cleared itself up immediately.

The plain truth is that thiotimoline is a solid gas. Though three-dimensionally present in a crystalline form, it is gaseous in the fourth dimension, diffusing rapidly through it into the water. We all know that such four-dimensional reactions produce temporal complications. Now, since the effect of a crystal ball is due to the fact that it passes four-dimensional light, translating it into three-dimensional images which our eyes are able to handle—such is the means by which it reveals the past and the future—it is the most useful means for studying such four-dimensional processes, and I am sure that, if Mr. Asimov uses one to observe his solutions as he makes them, he will be much enlightened.

His use of sodium chloride also deserves comment. In dealing with *all* of his science, I have long known that to be a very necessary additive.

And please add my name to the list of those waiting anxiously for the reincarnation of UNKNOWN. May that great day be soon!—Joseph M. Wilson, 507 North Oak Street, Normal, Illinois.

The next time you hear voices —LISTEN!

IT MAY BE your conscience speaking.

It may be saying: "Save some of that money, mister. Your future depends on it!"

Listen closely next time. Those are words of wisdom. Your future—and that of your family—*does* depend on the money you put aside in savings.

Do this: start *now* on the road to *automatic* saving by signing up on your company's Payroll Savings Plan for the purchase of U. S. Savings Bonds.

There's no better, no surer way to save money. Surer because it's automatic . . . better because it pays you back four dollars for every three you invest.

Do it now. If you can't join the Payroll Savings Plan, enroll in the Bond-A-Month Plan through your checking account.

Automatic saving is sure saving— U.S. Savings Bonds

Contributed by this magazine in co-operation with the Magazine Publishers of America as a public service.

AUDELS Carpenters and Builders Guides

4 vols. $6

AUDELS CARPENTERS AND BUILDERS GUIDE 1
TOOLS STEEL SQUARE SAW FILING JOINERY FURNITURE
AUDELS CARPENTERS AND BUILDERS GUIDE 2
BUILDERS MATHEMATICS DRAWING PLANS SPECIFICATIONS ESTIMATES
AUDELS CARPENTERS AND BUILDERS GUIDE 3
HOUSE AND ROOF FRAMING LAYING OUT FOUNDATIONS
AUDELS CARPENTERS AND BUILDERS GUIDE 4
DOORS WINDOWS STAIR BUILDING MILL WORK PAINTING
AUDELS CARPENTERS AND BUILDERS GUIDES ILLUSTRATED

Inside Trade Information

for Carpenters, Builders, Joiners, Building Mechanics and all Woodworkers. These Guides give you the short-cut instructions that you want—including new methods, ideas, solutions, plans, systems and money saving suggestions. An easy progressive course for the apprentice and student. A practical daily helper and Quick Reference for the master worker. Carpenters everywhere are using these Guides as a Helping Hand to Easier Work, Better Work and Better Pay. To get this assistance for yourself, simply fill in and mail FREE COUPON below.

Inside Trade Information On:

How to use the steel square—How to file and set saws—How to build furniture—How to use a mitre box—How to use the chalk line—How to use rules and scales—How to make joints—Carpenters arithmetic—Solving mensuration problems—Estimating strength of timbers—How to set girders and sills—How to frame houses and roofs—How to estimate costs—How to build houses, barns, garages, bungalows, etc.—How to read and draw plans—Drawing up specifications—How to excavate—How to use settings 12, 13 and 17 on the steel square—How to build hoists and scaffolds—skylights—How to build stairs—How to put on interior trim—How to hang doors—How to lath—lay floors—How to paint.

AUDEL, Publishers, 49 W. 23rd St., New York 10, N. Y.

Mail Audels Carpenters and Builders Guides, 4 vols., on 7 days' free trial. If OK I will remit $1 in 7 days and $1 monthly until $6 is paid. —Otherwise I will return them. No obligation unless I am satisfied.

Name_____

Address_____

Occupation_____

Employed by_____ JACK